

Bibliographie du site internet
<http://www.baillement.com>

965 21 mai 2026

1. -Aaron S, Al Hashmi A. Parakinesia Brachialis Oscitans due to Brain Stem Infarct. Dubai Medical journal - Case report – May 2019
2. -Abadie V, Chéron; G, Lyonnet S, Hubert P Couly G Le dysfonctionnement néonatal isolé du tronc cérébral Arch Pédiatr 1996;3:130-136
3. -Abadie V, Champagnat J, Fortin G, Couly G Succion-déglutition-ventilation et gènes du développement du tronc cérébral Arch Pédiatr 1999;6:1043-1047
4. -Abe K et al. Occurrences of Yawn and Swallow are Temporally Related. Dysphagia 2014
5. -AboEllail MAM, Kanenishi K, Mori N, Mohamed OAK, Hata T. 4D ultrasound study of fetal facial expressions in the third trimester of pregnancy. J Matern Fetal Neonatal Med. 2017
6. -Adelon Nicolas bâillement dictionnaire de médecine tome 3 Béchet Jeune Paris 1821
7. -Adolphs R, H Damasio, D Tranel, A Damasio Cortical systems for the recognition of emotion in facial expressions J Neurosci 1996;16(23):7678-7687
8. -Agbara R, Fomete B, Obiadazie AC, Idehen K, Okeke U. Temporomandibular joint dislocation: experiences from Zaria, Nigeria. J Korean Assoc Oral Maxillofac Surg. 2014;40(3):111-6.
9. -Aloe F Yawning. Arq Neuropsiquiatr 1994;52(2):27-36
10. -Alstadhaug KB, Andreou AP. Caffeine and Primary (Migraine) Headaches Frontiers in Neurology 2019;10:1275
11. -Alves NP, de Carvalho M, Reimão S, Castro J, Fonseca AC, Canhão P. Voluntary control of a plegic limb during yawning. J of Neurol 2018;265(2):433-435
12. -Amici F, Aureli F, Call J. Response facilitation in the four great apes: is there a role for empathy? Primates. 2014;55(1):113-118
13. -Aminoff Michael J Yawning Neurology and general medicine Churchill Livingstone New York
14. -Anias-Calderon J et al Adrenalectomy and dexamethasone replacement on yawning behavior Behav Brain Res 2004;154:255-259
15. -Anias J, Homgren B, Urba Holmgren, Eguibar JR Circadian variation of yawning behavior Acta Neurobiol Exp 1984;44:179-186
16. -Anderson JR, Wunderlich D Food-reinforced yawning in Macaca tonkeana American Journal of Primatology 1988;16:165-169
17. -Anderson JR, Myowa-Yamakoshi M, Matsuzawa T. Contagious yawning in chimpanzees The Royal Society Biology Proc R Soc Lond B Biol Sci 2004;271 Suppl 6:S468-470
18. -Anderson JR et al Psychological influences on yawning in children Current Psychology Letters Behaviour, brain, cognition 2003;2(11)
19. -Anderson JR, Matsuzawa T Yawning, an opening into empathy in Cognitive Development in Chimpanzees. Springer 2006:233-245
20. -Anderson J. One Thousand of Yawns. Primates 2020;61:729-740
21. -Andy OJ, Jurko M Diencephalic seizures Appl neurophysiol 1983;46:62-67
22. -Arai K, Kita K, et al Progressive dysautonomia in hemangioblastoma in the region of the fourth ventricle No To Shinkei 1986;38(2):195-200.
23. -Argiolas A, Melis MR, Gessa GL Intraventricular oxytocin induces yawning and penile erection in rats Europ J Pharmacol 1985;117:395-396
24. -Argiolas A et al Oxytocin : an extremely potent inducer of penile erection and yawning in male rats Europ J Pharmacol 1986;130:265-272
25. -Argiolas A, Gessa GL Central functions of oxytocin. Neurosci Biobehav Rev 1991;15(2):217-231
26. -Argiolas A, Melis MR The neuropharmacology of yawning Eur Pharmacol 1998;343(1):1-16
27. -Argiolas A, Melis MR; Gessa GL Yawning and penile erection: central dopamine-oxytocin-adrenocorticotropin connection. Ann N Y Acad Sci 1988;525:330-7
28. -Argiolas et al Oxytocin-induced penile erection and yawning in male rats: effect of neonatal monosodium glutamate and hypophysectomy Psychopharmacology 1989;97:383-387
29. -Argiolas A et al Role of calcium in the expression of ACTH-induced stretching, yawning and penile erection Brain Research Bulletin 1990; 24:853-856
30. -Argiolas A, Melis MR, Murgia S, Schioth HB, ACTH and alpha-MSH induced grooming; stretching; yawning and penile erection in male rats: site of action in the brain and role of melanocortin receptors. Brain Res Bull 2000;51(5):425-31
31. -Argiolas A, Melis MR, Gessa GL Yawning: neurochemistry; physiology and pathology Cephalgia 1987;7(suppl 6):131-137
32. -Argiolas A, MR Melis et al Monosodium glutamate does not alter ACTH- or apomorphine-induced penile erection and yawning Pharmacol Biochem Behav 1987;26:503-507
33. -Argiolas A, Gessa GL Paraventricular nucleus lesion prevents yawning and penile erection induced by

- apomorphine and oxytocin but not by ACTH in rats *Brain Research* 1987;421:349-352
34. -Argiolas A, Melis MR Oxytocin-induced penile erection and yawning: role of calcium and prostaglandins *Pharmacol Biochem Behav* 1990;35(3):601-605
 35. -Arnott SR, Singhal A, Goodale MA. An investigation of auditory contagious yawning. *Cogn, Aff Behav Neuosci.* 2009;9(3):335-342
 36. -Asencio M et al Biochemical and behavioral effects of boldine and glaucine on dopamine systems *Pharmacol Biochem Behav* 1999;62(1):7-13
 37. -Askenasy JJ Is yawning an arousal defense reflex? *J Psychol* 1989;123(6):609-621
 38. -Askenazy JJ Askenazy N Inhibition of muscle sympathetic nerve activity during yawning. *Clinical Autonomic Research* 1996;6:237-239
 39. -Atanasov AT. Stabilizing Effect of Yawning on Nasal Cycle. *Global Neuro* 2020;1(2):107-109.
 40. -Aubin HJ, Garma L le bâillement *Psychiatrie & psychobiologie* 1988;3:275-286
 41. -Aubin HJ, Garma L Yawning: a vigilance-enhancing factor? *Sleep Res* 1989;18:4
 42. -Auer H, Feldner-Bustin G, Hermentin K, Kollegger H, Schmidbauer M. Zerebrale Zystizerkose: Ein Fallbericht. *Tropenmed, Parasitol* 1987;9:101-109
 43. -Aumente Baena J Contribucion a la clinica de los bostezos *Revista Clinica Espanola* 1953;(12):308-314
 44. -Aureli F, de Waal FB Inhibition of social behavior in chimpanzees under high-density conditions. *Am J Primatol* 1997;41(3):213-28
 45. -Avidan A Dislocation of the temporomandibular joint due to forceful yawning during induction with propofol *J Clin Anesth*; 2002;14:159
 46. -Ayappa I, Rapaport D The upper airway in sleep: physiology of the pharynx *Sleep Med Reviews* 2003;7(1)9-33
 47. -Aychet J, Blois-Heulin C, Palagi E, Lemasson A. Facial displays in red-capped mangabeys (*Cercocebus torquatus*): Repertoire, social context, and potential intentionality. *J Comp Psychol.* 2021;135(1):98-113.
 48. -Baenninger R, Binkley S, Baenninger M Field observations of yawning and activity in humans. *Physiol Behav* 1996;59(3):421-425
 49. -Baenninger R Some comparative aspects of yawning in *Betta splendens*, *Homo Sapiens*, *Pantera leo* and *Papio sphinx*. *J Comp Psycho* 1987;101:349-354
 50. -Baenninger R, Greco M Some antecedents and consequences of yawning. *Psychological Record* 1991;41:453-460
 51. -Baenninger R On yawning and its functions *Psychonomic Bulletin & review* 1997;4(2):198-207
 52. -Baggio G, Ferrari F The role of dopaminergic receptors in the behavioral effects induced by lisuride in male rats *Psychopharmacology* 1983;80:38-42
 53. -Balaban E Changes in multiple brain regions underlie species differences in a complex; congenital behavior *Proc Natl Acad Sci USA*; 1997;94:2001-2006
 54. -Baladi MG, Newman AH, France CP Dopamine D3 receptors mediate the discriminative stimulus effects of quinpirole in free-feeding rats. *J Pharmacol Exp Ther.* 2010;332(1):308-315
 55. -Baladi MG, Newman AH, France CP. Influence of body weight and type of chow on the sensitivity of rats to the behavioral effects of the direct-acting dopamine-receptor agonist quinpirole. *Psychopharmacology (Berl).* 2011;217:573-585
 56. -Baladi MG, Thomas YM, France CP. Sensitivity to apomorphine-induced yawning and hypothermia in rats eating standard or high-fat chow. *Psychopharmacology (Berl).* 2012;222(1):27-36
 57. -Baldwin DM et al. Effects of intraventricular infusions of ACTH 1-24 and ACTH 4-10 on LH release, ovulation and behavior in the rabbit *Brain Research* 1974;80:291-301
 58. -Banks RJ, Mozley L, Dourish CT. The angiotensin converting enzyme inhibitors captopril and enalapril inhibit apomorphine-induced oral stereotypy in the rat. *Neuroscience.* 1994;58(4):799-805
 59. -Barbeau A, Gonce M, Kastin AJ Neurologically active peptides *Pharmacol Biochem Behav* 1976;5 (suppl 1):159-63
 60. -Barbizet J Yawning *J Neurol Neurosurg Psychiat* 1958;21:203-209
 61. -Barbizet J Le bâillement *Le Concours Médical* 1958;80(5):537-548
 62. -Barbizet J Bâillement et vigilance *Revue de gérontologie* juin 1959
 63. -Barlow G Ethology of the Asian Teleost *Badis badis* *Zeitschrift für Tierpsychology* 1964;21:99-123
 64. -Barthamus GT, Szielinski W. *Xenopus* Skin Mucus Induces Oral Dyskinesias *Pharmacol Biochem Behav* 1988;30:957-959
 65. -Bartholomew AJ, Cirulli ET. Individual Variation in Contagious Yawning Susceptibility Is Highly Stable and Largely Unexplained by Empathy or Other Known Factors. *PLoS One.* 2014;9(3):e91773.
 66. -Bartlett RH et al Physiology of yawning and its application to postoperative care *Surgical Forum* 1970;21: 222-223
 67. -Bartlett RH et al The yawn maneuver: prevention and treatment of postoperative pulmonary complications *Surgical Forum* 1971;22:196-198
 68. -Barros H et al Behavioural manifestations elicited by apomorphine, influence of the route of

- administration Pharmacology 1989;38:335-340
69. -Bauer G, Gerstenbrand F, Hengl W Involuntary motor phenomena in the locked-in syndrome J Neurol 1980;223(3):191-8
 70. -Bayri Y, Tanrikulu B, Bayrakli F, Koç DY, Dagçınar A. Intractable yawning caused by foramen magnum meningioma in a patient with neurofibromatosis type 2. Neurol India 2015;63:107-9
 71. -Beale MD, Murphree TM Excessive yawning and SSRI therapy. Int J Neuropsychopharmacol 2000;3(3):275-276
 72. -Beckmann H; Zimmer R An ethological interpretation of stereotypy induced by environmental stimulus Arch Psychiatr Nervenkr 1981;230(1):81-89
 73. -Bees HD et al. Behavioral and biochemical responses of mice to the intraventricular administration of acth analogs and lysine vasopressin. Life Sci 1976;18:1333-1340
 74. -Beltramo M, de Fonseca et al Reversal of dopamine D2 receptor responses by an anandamide transport inhibitor J Neurosci 2000;20(9):3401-3407
 75. -Béné J et al. Serotonin and yawning: A possible adverse drug reaction during antidepressant therapy, Presse Med. 2014;
 76. -Benoit A, Caplier A Hypovigilance analysis: blinking or yawning frequency Advanced Video and Signal Based Surveillance 2005:207-212
 77. -Benoit A, Bonnard L et al. Multimodal focus attention and stress detection and feedback in an augmented driver simulator. Pers Ubiquit Comput 2009;13:33-41
 78. -Bentley JC et al Investigation of stretching behaviour induced by the selective S-HT₆ receptor antagonist, Ro 04-6790, in rats British J Pharmacol 1999;126:1537-1542
 79. -Berendsen HG Androgenic influences on apomorphine-induced yawning in rats Behavioral and neural biology 1981;33:123-128
 80. -Berendsen HG, Gower AJ Opiate influences on drug-induced yawning in the rat Behav Neural Biol. 1981;33(1):123-128
 81. -Berendsen HG, Gower AJ Opiate-androgen interactions in drug-induced yawning and penile erections in the rats Neuroendocrinology 1986;42:185-190
 82. -Berendsen H et al Involvement of 5-HT_{1c}-receptors in drug-induced penile erections in rats Psychopharmacology 1990;101:57-61
 83. -Bernardi MM, Kirsten TB, Lago JH et al. Nepeta cataria L. var. citriodora (Becker) increases penile erection in rats. J Ethnopharmacol. 2011;137(3):1318-1322
 84. -Bertschy G, Vandel S, Sechter D, Bizouard P Bâillements et excitation sexuelle sous clomipramine. Place des mécanismes serotoninergiques. A propos of 2 cases Encephale 1991;17(6):515-517
 85. -Bertolotti M. Etude sur la pandiculation automatique des hémiplégiques Rev Neurol 1905;2(19):953-959
 86. -Bertolucci LF. Pandiculation: nature's way of maintaining the functional integrity of the myofascial system? J Bodyw Mov Ther. 2011;15(3):268-80.
 87. -Berzin F, Fortinguerra CR. EMG study of the anterior, superior and posterior auricular muscles in man. Ann Anat. 1993;175(2):195-197
 88. -Beyaert CA , et al Effect on airway caliber of stimulation of the hypothalamic locomotor region J Appl Physiol 1998;84:1388-1394
 89. -Bidaï E, Sznajder M, Fermanian Elaboration d'un questionnaire diagnostique du syndrom d'hyperventilation chez l'enfant Rev Mal Respir 2008;25(7):829-838
 90. -Bigot-Massoni D Le bâillement Thèse de doctorat en médecine Fac Lariboisière Prof CH Chouard 1989
 91. -Billard et coll Troubles de l'éveil et du sommeil Revue du Praticien 1996;46:20
 92. -Bielert C Testosterone Propionate Treatment of an XY Gonadal Dysgenetic Chacma Baboon. Hormones Behav 1985;19:372-385
 93. -Billeth R, Jorgler E, Baumhackl U Bilateral anterior operculum syndrome Nervenarzt 2000;71(8):651-4
 94. -Birca V, Saint-Martin C, Myers KA. A sign of brainstem involvement in acute disseminated encephalomyelitis ? Neurology 2020;94:1-2.
 95. -Blau JN. Resolution of migraine attacks: sleep and the recovery phase. J Neurol Neurosurg Psychiatry. 1982;45(3):223-226
 96. -Blau JN Migraine postdromes: symptoms after attacks Cephalgia 1991;11;(5):229-31
 97. -Blin, Danjou, Warot;, Fondarai, Puech Induction of yawning by low doses of apomorphine Psychiatr et psychobiol; 1988;3:195-199
 98. -Blin O, Masson G, Azulay JP, Fondarai J, Serratrice G Apomorphine-induced blinking and yawning in healthy volunteers. Br J Clin Pharmacol 1990;30(5):769-73
 99. -Blin O, Azulay JP, Masson G, Aubrespy G, Serratrice G Apomorphine-induced yawning in migraine patients: enhanced responsiveness Clin Neuropharmacol 1991;14(1):91-5
 100. -Blin O, Rasol O, Azulay JP, Serratrice G A single report of an hemiplegic arm stretching related to yawning: further investigation using apomorphine administration J Neuro Sci 1994;126:225-227

101. -Blin O le bâillement en neuropsychopharmacologie clinique. *Lettre du pharmacologue* 1996;10:217-219
102. -Blin O, Azulay JP, Masson G, Serratrice G Le bâillement; physiopathologie et neuropharmacologie *Thérapie* 1991;46:37-43
103. -Boone DR, McFarlane SC A critical view of the yawn-sigh as a voice therapy technique *J Voice* 1993;7(1):75-80
104. -Bordiushkov IuN A method of graphic registration of the act of yawning and others form of mouth movements *Biull Eksp Biol Med* 1958;46(7):885-887
105. -Borsini F, Bordi F, Riccioni T. 5-HT6 pharmacology inconsistencies. *Pharmacol, Biochem, Behav.* 2011;98: 169-172
106. -Bourson A, Moser PC Yawning induced by apomorphine; physostigmine or pilocarpine is potentiated by dihydropyridine calcium channel blockers *Psychopharmacology (Berl)* 1990;100(2):16-20
107. -Bourson A The effects of pre and post-operative procedures on physostigmine and apomorphine induced yawning in rats *Br J Pharmacology* 1989;34:915-917
108. -Bouyssou M, Tricoire J Experimental detection of a cervical arousal mechanism of yawning, enhancing intracerebral (CSF) fluid pressure *J Dental Res* 1985;64:721
109. -Brainin M, Elsenstädter A Lithium-triggered chronic cluster headache *Headache* 1985;25:394-395
110. -Bratzu J, Bharatiya R, Manca E, Cocco C, Argiolas A, Melis MR, Sanna F. Oxytocin induces penile erection and yawning when injected into the bed nucleus of the stria terminalis: A microdialysis and immunohistochemical study. *Behav Brain Res.* 2019;375:112147
111. -Bromage PR Yawning *BMJ* 31/01/1959 p304
112. -Brown RW, Perna MK, Schaefer TL, Williams MT. The effects of adulthood nicotine treatment on D2-mediated behavior and neurotrophins of rats neonatally treated with quinpirole. *Synapse* 2006;59(5):253-259
113. -Brown BJ, Kim S, Saunders H, Bachmann C, Thompson J, Ropar D, Jackson SR, Jackson GM. A Neural Basis for Contagious Yawning. *Curr Biol.* 2017 Aug 22. pii: S0960-9822(17)30966-1. doi: 10.1016/j.cub.2017.07.062
114. -Brumback RA Weinberg's syndrome: a disorder of attention and behavior problems needing further research. *Child Neurol* 2000;15(7):478-80
115. -Buijs RM; Kalsbeek A Hypothalamic integration of central and peripheral clocks *Nature R Neuroscience* 2001;2:521- 525
116. -Brus R, R Szkilnik, RM Kostrzewa Nitric oxide (NO) and central dopamine (DA) D3 receptor reactivity to quinpirole in rats *Act Neurobiol Exp* 1996;56:15-19
117. -Burk W. Why do we yawn? *Health* 2013;5(10):1572-1579.
118. -Buttner AP, Strasser R. Contagious yawning, social cognition, and arousal: an investigation of the processes underlying shelter dogs' responses to human yawns. *Anim Cogn.* 2013
119. -Cahill CA Yawn maneuver to prevent atelectasis *AORN* 1978;27(5):1000-1004
120. -Cammalleri M, Zatta E, Sala G, Fusetti S, Salmi Sturli A, Favero V. Yawning-induced alternobaric facial palsy in a healthy young adult: A case report and review of the pathophysiology. *Cranio.* 2025 Sep 4:1-5.
121. -Cameron JL et al Dopaminergic stimulation of oxytocin concentrations in the plasma of male and female monkeys by apomorphine and a D2 receptor agonist *Journal of Clinical Endocrinology and Metabolism* 1992;75(3):855-860
122. -Campbell M et al. Computer animations stimulate contagious yawning in chimpanzees *Proceed Royal Soc Biol* 2009;276(1676):4255-4259
123. -Campbell MW, de Waal F. Ingroup-Outgroup Bias in Contagious Yawning by Chimpanzees Supports Link to Empathy. *Plos One.* 2011;6(4):1-4
124. -Campbell M, de Waal F. Methodological Problems in the Study of Contagious Yawning; In Walusinski O (ed): *The Mystery of Yawning in Physiology and Disease.* Front Neurol Neurosci. Basel, Karger, 2010, vol 28, pp 120–127
125. -Campbell M, de Waal F. Chimpanzees empathize with group mates and humans, but not with baboons or unfamiliar chimpanzees. *Proc. R. Soc. B* 2014; 281: 20140013
126. -Campbell MW, Cox CR. Observational data reveal evidence and parameters of contagious yawning in the behavioral repertoire of captive-reared chimpanzees (*Pan troglodytes*). www.nature.com/scientificreports 2019;9:13271
127. -Campbell A. Oxytocin and human social behavior. *Pers Soc Psychol Rev.* 2010;14(3):281-295.
128. -Canales JJ, SD Iversen Psychomotor activating effects mediated by dopamine D2 and D3 receptors in the nucleus accumbens *Pharmacol Biochem Behav* 2000;67:161-168
129. -Canales JJ, Iversen SD Dynamic dopamine receptor interactions in the core and shell of nucleus accumbens differentially coordinate the expression of unconditioned motor behaviors *Synapse* 2000;36:297-306
130. -Carr L, Iacoboni M et al Neural mechanisms of empathy in humans: A relay from neural systems for imitation to limbic areas *PNAS*; 2003;100(9):5497-5502

131. -Carrillo M, Migliorati F, Bruls R, Han Y, Heinemans M, Pruis I, Gazzola V, Keyzers C. Repeated Witnessing of Conspecifics in Pain: Effects on Emotional Contagion. *PLoS One*. 2015;10(9):e0136979.
132. -Carskadon MM Yawning elicited by reading: effects of sleepiness. *Sleep research* 1992;21:101
133. -Carskadon MM Yawning elicited by reading : is an open mouth sufficient stimulus ? *Sleep research* 1991;20:116
134. -Casas M , Guardia J, Prat G, Trujols J The apomorphine test in heroin addicts *Addiction*1995;90:831-835
135. -Casciato S, Di Bonaventura C, et al. Recurrent partial seizures with ictal yawning as atypical presentation of Hashimoto's encephalopathy (steroid-responsive encephalopathy associated with autoimmune thyroiditis). *Epilepsy Behav*. 2011;22(4):799-803.
136. -Casetta G, Nolfo AP, Palagi E. Yawn contagion promotes motor synchrony in wild lions, *Panthera leo*. *Animal Behaviour* 2021;174:149-159
137. -Caswell TA. The effects of status on yawning behavior. Thesis. Arizona University. 1991
138. -Catli T, Acar M, Hanci D, Arikan OK, Cingi C. Importance of yawning in the evaluation of excessive daytime sleepiness: a prospective clinical study. *Eur Arch Otorhinolaryngol*. 2015;272(12):3611-3615
139. -Cattaneo L et al. Pathological yawning as a presenting symptom of brainstem ischemia in two patients *J Neurol Neurosurg Psychiat* 2006;77(1):98-100 et réponse.
140. -Celegnin A, Castiblanco Jimenez IA, Froio M, Vezzetti E, Olivetti EC, Marcolin F. Action units of facial expressions in emotional contagion. *iScienc* 2026;29(3):115042.
141. -Cerro R, Barbanti P, Buzzi MG, et al. Dopamine hypersensitivity in migraine: role of the apomorphine test. *Clin Neuropharmacol* 1997;20(1):36-41
142. -Chakradhara Rao US, Suresh Kumar S. Is high frequency yawning: A behavioural event of ethanol withdrawal. *Medical Hypotheses* 2011;77(5):935-936
143. -Chaminade T, Meary D, Orliaguet JP, Decety J Is perceptual anticipation a motor simulation ? a PET study *Neuroreport* dec 2001;12(17):3669-3674
144. -Chan MHM, Tseng CH. Yawning Detection Sensitivity and Yawning Contagion. *Iperception*. 2017;8(4):1-22.
145. -Chang CC et al. Amelioration of pathological yawning after tracheostomy in a patient with locked-in syndrome. *Europ J Neurol* 2008;15:e66-e67
146. -Chang CC et al Excessive yawning induced by stimulation of myofascial trigger point. *Europ J Neurol* 2009;16:e118-e119
147. -Charcot JM Leçon du mardi de la Salpêtrière Tome II; Lecrosnier et Babé ed Paris; p1-11; 1890
148. -Chase MH, McGinty DJ, Sterman MB Cyclic variation in the amplitude of a brainstem reflex during sleep and wakefulness *Experientia*1968; 24(1):47
149. -Chen CH, Lu ML Venlafaxine-induced excessive yawning. *Prog Neuropsychopharmacol Biol Psychiatry*. 2009;33(1):156-157
150. -Chen J, Collins GT et al Design, Synthesis, and Evaluation of Potent and Selective Ligands for the Dopamine 3 (D3) Receptor with a Novel in Vivo Behavioral Profile *J Med Chem* 2008;51:5905-5908
151. -Chouard CH, Bigot-Massoni D Mechanisms and physiologic role of yawning. [en français] *Ann Otolaryngol Chir Cervicofaciale* 1990;107(3):145-153
152. -Chouinard S, Ford B Adult onset tic disorders *J Neurol Neurosurg Psychiatry* 2000;68:738-743
153. -Chowdhury A, Datta AK, Biswas S, Biswas A. Parakinesia Brachialis Oscitans – a Rare Post-Stroke Phenomenon. Tremor and Other Hyperkinetic Movements. 2022; 12(1): 6.
154. -Choy CK; Cho P; Chung WY; Benzie IF Water-soluble antioxidants in human tears: effect of the collection method. *Invest Ophthalmol Vis Sci* 2001;42(13):3130-3134
155. -Chudler EH, Byers MR Behavioural responses following tooth injury in rats *Arch Oral Biol* 2005;50(3):333-340
156. -Cialdini RB, McPeck RW. Yawning, Yielding, and Yearning to Yawn. Paper presented at the meeting of the Midwest Psychological Association. Chicago, May 1974
157. -Clark DR. Stretching and yawning with Yeats and Pound. *The Malahat Review*. 1974;29:104-107
158. -Cochran CA, Perachio AA. Dihydrotestosterone Propionate Effects on Dominance and Sexual Behaviors in Gonadectomized Male and Female Rhesus Monkeys. *Hormones Behavior* 1977;8:175-187
159. -Code RA , Tang AH Yawning produced by dopamine agonists in rhesus monkeys *E J Pharmacology* 1991;201:235-238
160. -Cohen AJ Fluoxetine-induced yawning and anorgasmia reversed by cyproheptadine treatment. *Clin Psychiatry* 1992;53(5):174
161. -Colbern D et al. Limbic-midbrain lesions and acth-induced excessive grooming *Life Sci* 1977;21:393-402
162. -Collins GT, JM Witkin et al Dopamine agonist-induced yawning in rats: a dopamine d3 receptor mediated behavior. *J Pharmacol Exp Ther* 2005;314(1):310-9.
163. -Collins GT, Newman AH, Woods JH et al. Yawning and hypothermia in rats: effects of dopamine D3

- and D2 agonists and antagonists. *Psychopharmacology (Berl)*. 2007;193(2):159-170
164. -Collins GT. et al. Food restriction alters pramipexole-induced yawning, hypothermia, and locomotor activity in rats: Evidence for sensitization of dopamine D2 receptor-mediated effects. *JEPT* 2008;325:691-697
 165. -Collins GT et al. Narrowing in on compulsions: dopamine receptor functions *Exp Clin Psychopharmacol* 2008;16(4):498-502
 166. -Collins GT et al. Pro-erectile Effects of Dopamine D2-like Agonists are Mediated by the D3 Receptor in Rats and Mice *JPEP* 2009;329(1):210-217
 167. -Collins GT, Truong YN, et al. Behavioral sensitization to cocaine in rats: evidence for temporal differences in dopamine D(3) and D (2) receptor sensitivity. *Psychopharmacology (Berl)*. 2011;215(4):609-20.
 168. -Colosimo C, Francesco E, Pontieri, Virgilio Gerald H. et al. Yawning in Parkinson's disease *Neurology* 1999;52(2):428
 169. -Conceicao IM, Frussa-Filho R Effects of a single administration of buspirone on catalepsy; yawning and stereotypy in rats *Braz J Med Biol Res* 1993;26(1):71-74
 170. -Cooper NR, Puzzo I, Pawley A Contagious yawning: the mirror neuron system may be a candidate physiological mechanism *Medical Hypotheses* 2008;71(6):975-976
 171. -Cooper NR, Puzzo I, et al. Bridging a yawning chasm: EEG investigations into the debate concerning the role of the human mirror neuron system in contagious yawning. *Cogn Affect Behav Neurosci*. 2012;12(2):393-405
 172. -Cooper SJ, Dourish CT Neural basis of drug induced yawning in neurobiology of stereotyped behaviour Oxford ed 1990
 173. -Cooper SJ, Rusk IN, Barber DJ. Yawning Induced by the Selective Dopamine D2 Agonist N-0437 is Blocked by the Selective Dopamine Autoreceptor Antagonist (+)-UH 232. *Physiol Behav*. 1989;45:1263-1266
 174. -Cordoni G, Favilli E, Palagi E. Earlier than previously thought: Yawn contagion in preschool children. *Dev Psychobiol*. 2021 Jan 27. doi: 10.1002/dev.22094.
 175. -Cope ZA, Huggins KN, et al. Neonatal quinpirole treatment enhances locomotor activation and dopamine release in the nucleus accumbens core in response to amphetamine treatment in adulthood. *Synapse*. 2009;64(4):289-300.
 176. -Corey TP, Shoup-Knox ML, Gordis EB, Gallup GG Jr. Changes in Physiology before, during, and after Yawning. *Front Evol Neurosci*. 2011;3(7):1-11
 177. -Couly G Development of the face in the embryo *Revue du praticien* 1991;41:1 7-15
 178. -Courserant Bâillements continuel; une observation. *Gazette des hôpitaux civils et militaires* 10/1846;f 119:475
 179. -Couture A Des Dieux qui bâillent et qui font bâiller dans la mythologie de l'Inde *Sciences Religieuses* 2009;38(3-4):411-425
 180. -Cronin TG Yawning : an early manifestation of vasovagal reflex *AJR*; 1988;150:209
 181. -Crosby L, Parsons LC Clinical neurologic assessment tool: development and testing of an instrument to index neurologic status. *Heart Lung* 1988;18(2):121-129
 182. -Crouzon et Ducas Mouvements involontaires de la face et de la tête; à allure de spasmes rythmiques; survenant chez un malade atteint d'encéphalite léthargique *Revue de Neurologie Paris* n°5; mai 1928
 183. -Cummings P et al Drowsiness; counter-measures to drowsiness; and the risk of a motor vehicle crash *Injury Prevention* 2001;7:194-199
 184. -Czyrak A et al. Some central pharmacological effects of the calcium channel antagonist flunarizine *J Neural Transm* 1991;83:179-188
 185. -D'Adamo G, Dall'Asta A, Ardizzi M, Sorrentino S, Mora V, Arenare G, D'Amaro P, Capurso M, Ferroni F, Ollari Ischimji D, Ferrari C, Ghi T, Gallese V. Prenatal behavioral contagion through maternal yawning and fetal resonance. *Curr Biol*. 2026;36(10):2696-2702.e4.
 186. -Dale RC et al. Encephalitis lethargica syndrome: 20 new cases and evidence of basal ganglia autoimmunity *Brain* 2004;127(1):21-33
 187. -d'Andréa C, Méliet JL, Staikowski F Paralygies faciales périphériques d'origine dysbarique. *Presse Med*. 2008;37(4 Pt 2):643-647
 188. -Daquin G, Micallef J, Blin O Yawning *Sleep Medicine Reviews* 2001 5(4):299-312
 189. -da Silva GE Potentiation of penile erection and yawning responses to apomorphine by cannabinoid receptor antagonist in rats *Neurosci Letter* 2003;349(1):49-52
 190. -de Castro Siqueira L. Yawning and thermoregulation in budgerigars: lack of support from results. *Animal Behaviour* 2009;78(6):e1-e2
 191. -Decety J, Chaminade T, Grèzes J, Meltzoff A PET exploration of neural mechanisms involved in reciprocal imitation *NeuroImage* 2002;15:265-272
 192. -Decety J, Nadel J *Imiter pour découvrir l'humain* PUF ed (Paris) 2002 & autres articles de J Decety
 193. -Dejerine J *Sémiologie des affections du système nerveux* Masson Paris 1914
 194. -De Las Cuevas C, Sanz EJ Duloxetine-induced excessive disturbing and disabling yawning. *J Clin*

- Psychopharmacol. 2007;27(1):106-107.
195. -Delbende C, Jegou S et al Role of alpha-MSH and related peptides in the central nervous system *Rev Neurol (Paris)* 1985;141(6-7):429-439
 196. -Del Bene E, Poggioni M Video assessment of yawning induced by sublingual apomorphine in migraine *Headache* 1994;34(9):536-8
 197. -Delini-Stula A, Hunn V Effects of single and repeated treatment with antidepressants on apomorphine-induced yawning in the rat: the implication of alpha-1 adrenergic mechanisms in the D-2 receptor function *Psychopharmacology* 1990;101:62-66
 198. -Delius JD. Irrelevant behaviour, information processing and arousal homeostasis. *Psychol Forsch.* 1970;33(2):165-88.
 199. -Delmas Marsallet P Le signe du bâillement dans les lésions du cerveau frontal. *Oto-neuro-ophtalmologie* 1937;15:183
 200. -De Marco A, Cozzolino R et al. Interactions Between Third Parties and Consortship Partners in Tonkean Macaques (*Macaca tonkeana*). *Int J Primatol* 2011;32:708–720
 201. -de Mateos-Verchere JG The octadecanuropeptide ODN inhibits apomorphine-induced yawning in rats *European J of Pharmacology* 1998;357:121-122
 202. -Demuru E, Palagi E. In Bonobos Yawn Contagion Is Higher among Kin and Friends. *PLoS One.* 2012; 7(11): e49613
 203. -Depoortere R et al. Penile erection and yawning induced by dopamine D2-like receptor agonists in rats *Behavioural Pharmacol* 2009;20(4):303-31
 204. -Deputte BL Study of yawning in two species of Cercopithecidae; *Cercocebus albigena albigena gray* and *Macaca fascicularis raffles*: Research on causal and functional factors; A consideration of socio-bioenergetic factors. Thèse présentée devant l'Université de Rennes; pour obtenir le titre de Docteur en Troisième Cycle; February 1978.
 205. -Deputte BL Revue sur le comportement de bâillement chez les vertébrés *Bull interne société française pour l'étude du comportement animal.*1974;1:26-35.
 206. -DeputteBL, Johnson J, Hempel M, Scheffler G Behavioral effects of an antiandrogen in adult male rhesus Macaques. *Hormones and behavior* 1994;28:155-164
 207. -Deputte BL, Fontenelle A Menace et bâillement chez *Macaca Fascicularis*: intérêt de l'étude électromyographique comparée. *Biology of behaviour* 1980 5:47-54
 208. -Deputte BL Ethological study of yawning in primates *Ethology* 1994; 98;221-245
 209. -De Vittoris S, Caselli M, Demur E, Gillespie L, Norscia I. Beware! Different methods lead to divergent results on yawn contagion modulation in bonobos. *American Journal of Primatology* 15 August 2024 <https://doi.org/10.1002/ajp.23671>
 210. -de Vries, Visser, Prechtl The emergence of fetal behaviour *Early Human Development* 1982;7:301-322
 211. -de Wied D Behavioral pharmacology of neuropeptides related to melanocortins and the neurohypophyseal hormones. *Eur J Pharmacol* 1999;375(1-3):1-11
 212. -Dewey RB Jr, Hutton JT, LeWitt PA, Factor SA A randomized; double-blind; placebo-controlled trial of subcutaneously injected apomorphine for parkinsonian off-state events. *Arch Neurol* 2001;58(9)1385-1392
 213. -Diaz-Romero M, Eguibar JR, Moyaho A Bombesin decreases yawning in a high-yawning subline of Sprague-Dawley rats *Pharmacol Biochem Behav* 2002;71:103-109
 214. -Diaz-Romero M, JA Arias-Montano et al. Enhanced binding of dopamine D(1) receptors in caudate-putamen subregions in High-Yawning Sprague-Dawley rats *Synapse* 2005;56(2):69-73
 215. -Dibaj P, Brockmann K, Gartner J. Dopamine-Mediated Yawning-Fatigue Syndrome With Specific Recurrent Initiation and Responsiveness to Opioids *JAMA Neurol* 2019.3937.
 216. -Dijksterhuis Ap et al The perception-behavior expressway automatic effects of social perception on social behavior *BBS* 2003
 217. -Di Martino EF, Thaden R, Antweiler C, et al. Evaluation of Eustachian tube function by sonotubometry: results and reliability of 8 kHz signals in normal subjects *Eur Arch Otorhinolaryngol.* 2007;264(3):231-236
 218. -D'Mello, Vincent, Lerner Yawning as complication of electroconvulsive therapy and concurrent neuroleptic withdrawal. *The Journal of Nervous and Mental Disease*; 1988;176(3):188-189
 219. -Doelman CJ, Rijken JA. Yawning and airway physiology: a scoping review and novel hypothesis. *Sleep and Breathing* 2022
 220. -Doger E, Urba-Holmgren R, Eguibar JR, Holmgren B GABAergic modulation of yawning behavior. *Pharmacol Biochem Behav* 1989;34(2):237-240
 221. -Doherty PC, Wisler PA Stimulatory effects of quinelorane on yawning and penile erection in the rat *Life Science* 1994;54(7):507-51
 222. -Dolkart KM. A conjecture as to the physiological origins of yawning. *Int J App Basic Med Res* 2017;7(2):148.
 223. -Donat JF, Wright FS Unusual variants of infantile spasms *J Child Neurol* 1991;6(4):313-8

224. -Dorr RT, Lines R, Levine N, Brooks C, et al. Evaluation of melanotan-II, a superpotent cyclic melanotropic peptide in a pilot phase-1 clinical study *Life Sciences* 1996;58(20):1777-1784
225. -Dourish CT, SJ Cooper Yawning elicited by systemic and intrastriatal injection of piribedil and apomorphine in the rat *Psychopharmacology* 1985;86:175-181
226. -Dourish CT, PH Hutson Bilateral lesions of the striatum induced with 6-hydroxydopamine abolish apomorphine-induced yawning in rats *Neuropharmacology* 1985;24(11):1051-1055
227. -Draghici R, Saracutu OI, Pollis M, Manfredini D. Microprolactinoma (Pituitary Adenoma) as a Cause of Secondary Headache in a Pediatric Patient With Pain and Restricted Mouth Opening: A Case Report. *Case Rep Dent.* 2026;2026:8912262
228. -Du X, Yao Y, Chen J, Yang X, Zhang L, Tang Y, Hao X, Zhou D, Lian S, Wang F, Zhang X, Sun M, Guo J. Peri-ictal yawning: A potential lateralizing sign in temporal lobe epilepsy.
229. -Dubuc I, Protais P et al Antagonism of the apomorphine-induced yawning by atypical neuroleptics *Neuropharmacology* 1982;21:1203-1206
230. -Eldakar OT, Dauzonne M, Prilutzkaya Y, Garcia D, Thadal C, Gallup AC. Temperature-Dependent in Self-Reported Contagious Yawning. *Adaptive Human Behavior and Physiology.* 2015;1(2).
231. -Eldakar OT, Tartar JL, Garcia D, Ramirez V, Dauzonnell M, Armani Y, Gallup AC. Acute Physical Stress Modulates the Temporal Expression of Self-Reported Contagious Yawning in Humans. *Adaptive Human Behavior and Physiology* 2017
232. -Elo H Yawning and thermoregulation *Sleep Breath.* 2010;14(4):391-2.
233. -Edsman CM Gähnen in Die Religion in Geschichte und Gegenwart. Galling K and Werbeck W, ed. Tübingen. Mohr. 1958. 7 vols (vol 2), 1186.
234. -Egerman RS, Emerson DS A fetal yawn *N Eng J Med* 1996;335:1497
235. -Eguibar JR et al Behavioral differences between selectively bred rats: D1 versus D2 receptors in yawning and grooming *Pharmacology; Biochemistry and Behavior* 2003;74:827-832
236. -Eguibar JR et al Genotype-dependent effect of ACTH 1-24 on grooming and yawning in two inbred strains of rats *Neuropeptides* 2004;38:283-288
237. -Eguibar JR, Cortes MD, Lara-Lozano M, Mendiola DM. Dopaminergic D2-like agonists produce yawning in the myelin mutant taiep and Sprague-Dawley rats. *Pharmacol Biochem Behav.* 2012;102(1):118-123.
238. -Eguibar JR, Cortes C, Isidro O, Ugarte A. Central administration of oxytocin differentially increases yawning, penile erections and scratching in high- (HY) and low-yawning (LY) sublines of Sprague-Dawley rats. *Pharmacol Biochem Behav.* 2015;134:6-11.
239. -Eguibar JR, Cortes C, Toriz CG, Romero-Carbente JC, González-Flores O, Fernández-Guasti A. Differential organization of male copulatory patterns in high- and low-yawning-frequency sublines versus outbred Sprague-Dawley rats. *Physiol Behav.* 2015;153:84-90.
240. -Eguibar JR, Uribe CA, Cortes C, Bautista A, Gallup AC. Yawning reduces facial temperature in the high-yawning subline of Sprague-Dawley rats. *BMC Neurosci.* 2017;18(1):3.
241. -Elliott L, Coleman et al. Effect of posture on levels of arousal and awareness in vegetative and minimally conscious state patients: a preliminary investigation *JNNP* 2005;76:298-299
242. -Elo H Yawning and thermoregulation *Sleep Breath.* 2010;14(4):391-2.
243. -Elo H. Yawning cannot cause significant temperature decreases in humans. *Sleep Med* 2011;12(1):102
244. -Enokizu A, Morisaka T, Murakami K, Sakurai N, Ueda N, Yoshioka M. Yawn-like behavior in captive common bottlenose dolphins (*Tursiops truncatus*). *Behav Processes.* 2021 Aug; 189:104444. doi: 10.1016/j.beproc.2021.104444.
245. -Erkoyun HU, Beckmann Y, Bülbül NG, Incesu TK, Kanat NG, Ertekin C. Spontaneous yawning in patients with multiple sclerosis: A polygraphic study. *Mult Scler Relat Disord.* 2017;17:179-183.
246. -Ertekin C, Bulbul NG, Uludag IF, Tiftikcioglu BI, Arici S, Gurgor N. Electrophysiological association of spontaneous yawning and swallowing. *Exp Brain Res.* 2015;233(7):2073-80
247. -Estow S, Jamieson JP, Yates JR. Self-monitoring and mimicry of positive and negative social behaviors *J Res Personality.* 2007;41(2):425-433
248. -Evans SM, Griffiths RR Caffeine withdrawal: a parametric analysis of caffeine dosing conditions. *J Pharmacol Exp Ther.* 1999;289(1):285-294.
249. -Evans EB Yawning in pharyngeal obstruction *British medical J* 1978;1(6110):443-444
250. -Eventide C, Ajoy N, Tai YF, Lichtblau N. An unusual case of bilateral anterior opercular syndrome from a neuro-rehabilitation perspective. *JAAPA* 2019;32(6):26-28.
251. -Evidente VG, Hardy KG Yawning in Parkinson's disease. *Neurology* 1999;52(2):428
252. -Evidente VG Is it a tic or tourette's? Clues for differentiating simple from more complex tic disorders *Postgrad Med* 2000; 108(5):175-176 et 179-182
253. -Fanciullacci M, Alessandri M, Del Rosso A Dopamine involvement in the migraine attack. *Funct Neurol* 2000;15 Suppl 3:171-81
254. -Fearon C, Lees AJ, McKinley JJ, McCarthy A, Smyth S, Farrell M, Lynch T. On the Emergence of Tremor in Prodromal Parkinson's Disease. *J Parkinsons Dis.* 2021
255. -Feranchak AP, Orenstein SR, Cohn JF. Behaviors associated with onset of gastroesophageal reflux

- episodes in infants. Prospective study using split-screen video and pH probe. *Clin Pediatr (Phila)*. 1994;33(11):654-662
256. -Ferrari W Behavioural changes in animals after intracisternal injection with adrenocorticotrophic hormone and melanocytostimulating hormone *Nature* 1958;181(4613):925-926
 257. -Ferrari W, Gessa, GL, Vargiu L Behavioral effects induced by intracisternally injected ACTH and MSH *Ann NY Acad Sci* 1963;104:330-345
 258. -Ferrari F et al Influence of sildenafil on central dopamine-mediated behaviour in male rat *Life Science* 2002;70:1501-1508
 259. -Ferrari F, Mangiafico V Effect of isolation on dopaminergic agonist-induced penile erections and stretching and yawning in male rats *Behavioural Brain Res* 1988;28:309-313
 260. -Ferrari F, Giuliani D Involvement of dopamine D2 receptors in the effect of cocaine on sexual behaviour and stretching-yawning of male rats *Neuropharmacology* 1997;36(6):769-777
 261. -Ferrari F Sexual excitement and stretching and yawning induced by b-ht 920 *Pharmacological Research Communications* 1985;17(6):557-563
 262. -Ferrari F, Pelloni F, Giuliani D. Behavioural evidence that different neurochemical mechanisms underly stretching-yawning and penile erection induced in male rats by SND 919, a new selective D2 dopamine receptor agonist. *Psychopharmacology* (1993) 113 : 172-176
 263. -Fink JN Localization of the "sneeze center" *Neurology* 2001;56(1)138
 264. -Flaskerud JH. Yawning, Why and When ? *Mental Health* 2016;37(7):526-529
 265. -Flechter S, Cohen F, Borenstein F, Regev I, Vardi J, Yawning as a paroxysmal sign of diencephalic seizures. *Archivio di Psicologia Neurologia e Psichiatria* 1982;43:45-54
 266. -Fontenot MB, Padgett EE et al The effects of fluoxetine and buspirone on self-injurious and stereotypic behavior in adult male rhesus macaques. *Comp Med*. 2005;55(1):67-74.
 267. -Fontenot MB, WilkesMN, Lynch CS Effects of Outdoor Housing on Self-Injurious and Stereotypic Behavior in Adult Male Rhesus Macaques (*Macaca mulatta*). *J Am Ass Laboratory Animal Science* 2006; 45(5):35-43
 268. -Forté MC thèse le bâillement 1982
 269. -Frank D et al. Puppy behaviours when left home alone: a pilot study *Applied Anim Behav Sci*. 2007
 270. -Franzen A, Mader S, Winter F. Contagious Yawning, Empathy, and Their Relation to Prosocial Behavior. *Journal of Experimental Psychology*. 2018;147(12):1950-1958.
 271. -Fraser AF Pandiculation: the comparative phenomenon of systematic stretching *Appl Anim Behav Sci* 1989;23:263-268
 272. -Fraser AF The phenomenon of pandiculation in the kinetic behaviour of the sheep fetus. *Appl Anim. Behav. Sci.*, 1989;24:169-182
 273. -Freye E Acute abstinence syndrome following abrupt cessation of long-term use of tramadol : a case study *Europ J Pain* 2000;4:307-311
 274. -Friedman JH. Yawning, or Not Having Enough To Do. *Medicine & Helath Rhode Island*. 2012;95(8):234
 275. -Fundaro A Chronic nimodipine and yawning behavior in grouped or individually housed rats *Prog europsychopharmacol Biol Psychiatry* 1996;20(1):121-127
 276. -Furtado D Provocation spinale d'un réflexe de bâillement *Rev Oto Neuro Ophtalmolo* 1951;23(1)
 277. -Fujikawa M, K Yamada Involvement of beta-adrenoceptors in regulation of the yawning induced by neuropeptides, oxytocin and a-Melanocyte-Stimulating Hormone *Pharmacol Biochem Behav* 1995;50(3):339-343
 278. -Fujikawa M, Yamada K, Nagashima M, Furukawa T Involvement of beta-adrenoreceptors in regulation of the yawning induced by neuropeptides; oxytocin and alpha-melanocytes stimulating hormone in rats. *Pharmacol Biochem Behav* 1995;50:339-343
 279. -Fujikawa M et al The new muscarinic M1-receptor agonist YM796 evokes yawning and increases oxytocin secretion from the posterior pituitary gland in rats *Pharmacol Biochem Behav* 1996;55(1):55-60
 280. -Fureix C et al. Co-occurrence of yawning and stereotypic behaviour in horses. *ISRN Zoology*. 2011
 281. -Furukawa T Yawning behavior for preclinical drug evaluation *Meth Find Exp Clin Phamacol* 1996;18(2):141-155
 282. -Gähwiler S, Bremhorst A, Tóth K, Riemer S. Fear expressions of dogs during New Year fireworks: a video analysis. *Scientific Reports* 2020;10:16035.
 283. Gallo A, Zanolli A, Caselli M, Palagi E, Norscia I. First evidence of yawn contagion in a wild monkey species. *Sci Rep*. 2021;11(1):17957.
 284. -Galotti A, Manduca G, Digregorio M, Ambrosini S, Romano D, Andreazzoli M, Palagi E. Diving back two hundred million years: yawn contagion in fish. *Commun Biol*. 2025;8(1):580
 285. -Galotti A, Pedruzzi L, Francesconi M, Quartesan A, Gamessa SA, Serra V, Petroni G, Bogale BA, Lemasson A, Palagi E. Social engagement modulates wild monkeys' vocal expressions and the behavioral response to that of others. *iScience*. 2025;29(1):114408.
 286. -Gallup A, Gallup G. Yawning as a brain cooling mechanism: nasal breathing and forehead cooling

- diminish the incidence of contagious yawning. *Evolutionary Psychology* www.epjournal.net; 2007;5(1): 92-101
287. -Gallup AC, Gallup GG Jr. Yawning and thermoregulation. *Physiol Behav.* 2008;95(1-2):10-16
 288. -Gallup AC, Miller ML, Clark AB Yawning and thermoregulation in budgerigars *Melopsittacus undulatus* *Animal Behav* 2009;77(1):109-113
 289. -Gallup AC, Gallup Jr GG Venlafaxine-induced excessive yawning: a thermoregulatory connection *Prog Neuro Psychopharmacol Biol Psychiatry* 2009;33(4):747
 290. -Gallup AC, Gallup GG Jr, Feo C. Yawning, sleep, and symptom relief in patients with multiple sclerosis. *Sleep Med.* 2010;11(3):329-331
 291. -Gallup GG, Gallup AC Excessive yawning and thermoregulation: two case histories of chronic, debilitating bouts of yawning. *Sleep Breath.* 2010;14(2):157-159
 292. -Gallup AC. Yawning as a behavioral adaptation to heat stress and water scarcity in white-faced capuchins (*Cebus capucinus*). *Am J Phys Anthropol.* 2010;142(4):670-61.
 293. -Gallup AC, Gallup GG Jr. Medical implications of excessive yawning in relation to thermoregulatory dysfunction. *Eur J Neurol.* 2009;16(6):e120.
 294. -Gallup AC. The thermoregulatory hypothesis of yawning: Time to reconsider terms such as "impossible" and "cannot" and evaluate theories based on evidence. *Sleep Med* 2011;12(1):102-10
 295. -Gallup AC. Why do we yawn? Primitive versus derived features. *Neurosci Biobehav Rev.* 2011;35(3):765-9
 296. -Gallup AC, Eldakar OT. Contagious yawning and seasonal climate variation. *Frontiers in Evolutionary Neuroscience.* 2011; september
 297. -Gallup AC. Excessive yawning and thermoregulatory dysfunction. *Sleep Breath* 2011;15:271-273
 298. -Gallup AC, Miller RR, Clark AB. Changes in Ambient Temperature Trigger Yawning But Not Stretching in Rats. *Ethology.* 2011;117:145–153
 299. -Gallup AC, Hack GD. Human paranasal sinuses and selective brain cooling: A ventilation system activated by yawning? *Med Hypotheses.* 2011;77(6):970-973
 300. -Gallup A, Eldakar OT. The thermoregulatory theory of yawning: what we know from over 5 years of research. *Front Neurosci.*2012;6:188
 301. -Gallup AC. Abnormal yawning in stroke patients: the role of brain thermoregulation. *Front Neurosci.* 2014
 302. -Gallup AC, Gallup JA. Frequent yawning as an initial signal of fever relief. *Med Hypotheses* 2013; 81(6): 1034-5
 303. -Gallup AC, Swartwood L, Militello J, Sackett S. Experimental evidence of contagious yawning in budgerigars (*Melopsittacus undulatus*). *Anim Cogn.* 2015;18(5):1051-158
 304. -Gallup AC, Church AM. The effects of intranasal oxytocin on contagious yawning. *Neuroscience Letters* 2015;607:13-16
 305. -Gallup A, Church AM, Miller H, Risko EF, Kingstone A. Social Presence Diminishes Contagious Yawning in the Laboratory. *Sci Rep.* 2016;6:25045.
 306. -Gallup A. Ambient temperature modulates yawning. *Temperature.* 2016;3(1):23–24.
 307. -Gallup AC, Massen JJ. There is no difference in contagious yawning between men and women. *R Soc Open Sci.* 2016;3(9):160174.
 308. -Gallup AC, Church AM, Pelegriano AJ. Yawn duration predicts brain weight and cortical neuron number in mammals. *Biol Lett.* 2016;12(10)
 309. -Gallup A, Herron E, Militello J, Swartwood L, Cortes C, Eguibar J. Thermal imaging reveals sizable shifts in facial temperature surrounding yawning in budgerigars (*Melopsittacus undulatus*). *Temperature* 2017;4(4):xxxxx
 310. -Gallup AC, Vasilyev D, Anderson N, Kingstone A. Contagious yawning in virtual reality is affected by actual, but not simulated, social presence. *Sci Rep.* 2019;9(1):294-304.
 311. -Gallup AC, Moscatello L, Massen JJM. Brain weight predicts yawn duration across domesticated dog breeds. *Curr Zool.* 2020;66(4):401-405.
 312. -Gallup A, Meyers K. Seeing others yawn selectively enhances vigilance: an eye-tracking study of snake detection. *Animal Cognition* 2021
 313. -Gallup AC, Kret ME, Eldakar OT, Folz J, Massen JJM. People that score high on psychopathic traits are less likely to yawn contagiously. *Sci Rep.* 2021;11(1):23779.
 314. -Gallup A. The causes and consequences of yawning in animal groups. *Animal Behavior* 187 (2022) 209e219
 315. -Gallup AC, Schild AB, Ühlein MA, Bugnyar T, Massen JJM. No Evidence for Contagious Yawning in Juvenile Ravens (*Corvus corax*): An Observational Study. *Animals (Basel).* 2022;12(11):1357.
 316. -Gallup A, Wozny S. Interspecific Contagious Yawning in Humans. *Animals (Basel)* 2022;12(15):1908.
 317. -Gallup AC, Wozny SM. The Role of Empathic Concern and Gender on Interspecific Contagious Yawning in Humans. *Animals (Basel)* 2023;13(10):1700.
 318. -Galotti A, Romano M, Baragli P, Palagi E. Yawning in sync: implications for social cohesion in

- horses. *Curr Zool.* 2024;71(2):137-151.
319. -Gamberini MT, Bolognesi ML, Nasello AG. The modulatory role of M2 muscarinic receptor on apomorphine-induced yawning and genital grooming. *Neuroscience Letters* 2012; 531:91-95
 320. -Gamberini MT, Gamberini MC, Nasello AG. Involvement of dopaminergic and cholinergic pathways in the induction of yawning and genital grooming by the aqueous extract of *Saccharum officinarum* L. (sugarcane) in rats. *Neuroscience Letters* 2015;584:270-275
 321. -García-García F, Acosta-Peña E, Venebra-Muñoz A, Murillo-Rodríguez E. Sleep-inducing factors. *CNS Neurol Disord Drug Targets.* 2009;8(4):235-244.
 322. -Gessa GL Stretchings and yawnings induced by adrenocorticotrophic hormone *Nature* 1966;5047:426-427
 323. -Gessa GL Stretching and yawning movements after intracerebral injection of ACTH *Revue Canadienne Biologie* 1967;26(3):229-236
 324. -Ghanizadeh A. Propranolol in yawning prophylaxis: a case report. *Gen Hosp Psychiatry.* 2011 Nov
 325. -Ghika J et al Dissociated preservation of automatic-voluntary jaw movements in a patient with biopercular and unilateral pontine infarcts *Eur Neurol* 2003;50:185-188
 326. -Giganti F, Hayes MJ, Akilesh MR, Salzarulo P. Yawning and behavioral states in premature infants. *Dev Psychobiol.* 2002;41(3):289-29
 327. -Giganti F, Hayes MJ, Cioni G, Salzarulo P Yawning frequency and distribution in preterm and near term infants assessed throughout 24-h recordings *Infant Behav & Development* 2007;30(4):641-647
 328. -Giganti F, Ziello ME Contagious and spontaneous yawning in autistic and typically developing children *CPL* 2009
 329. -Giganti F, Zilli I. The daily time course of contagious and spontaneous yawning among humans. *J Ethol* 2011;29(2):215-216
 330. -Giganti F, Zilli I, Aboudan S, Salzarulo P. Sleep, sleepiness and yawning. *Front Neurol Neurosci.* 2010;28:42-6.
 331. -Giganti F, Salzarulo P. Yawning throughout life. *Front Neurol Neurosci.* 2010;28:26-31
 332. -Giganti F, Toselli M, Ramat S. Developmental trends in a social behaviour: contagious yawning in the elderly. *Giornale di Psicologia dello Sviluppo.* 2012;101:111-117
 333. -Giganti F, Guidi S, Ramat S, Zilli I, Raglione LM, Sorbi S, Salzarulo P. Yawning: A behavioural marker of sleepiness in de novo PD patients. *Parkinsonism Relat Disord* 2013
 334. -Gilbert D Is Yawning a brainstem phenomenon ? *The Lancet* 1988; 596
 335. -Gilles De La Tourette GE Etude sur une affection nerveuse caractérisée par l'incoordination motrice accompagnée d'écholalie et coprolalie. *Arch Neurol Paris;* 1885;9:19-42
 336. -Gimenez-Llort L, Canete T, Guitart-Masip M, Fernandez-Teruel A, Tobena A. Two distinctive apomorphine-induced phenotypes in the Roman high- and low-avoidance rats. *Physiol Behav.* 2005;86(4):458-466.
 337. -Givens S The nonverbal basis of attraction: flirtation, courtship and seduction. *Psychiatry* 1978;41:346-359
 338. -Goldie L Yawning and epilepsy *J of Psychosomatic Research* 1961;5:263-268
 339. -Goldberg RL Sustained yawning as a side effect of imipramine *Int J Psychiatry Med* 1983-84;13(4):277-80
 340. -Gómora-Arrati P, Cortes C, Trujillo A, Encarnación-Sánchez JL, Galicia-Aguas YL, González-Flores O, Eguibar JR. Mating-induced analgesia is dependent of copulatory male pattern in high- and low-yawning male rats. *Physiol Behav.* 2022;246:113694.
 341. -Gorchynski J, Karabidian E, Sanchez M. The "syringe" technique: a hands-free approach for the reduction of acute nontraumatic temporomandibular dislocations in the emergency department. *J Emerg Med.* 2014;47(6):676-81
 342. -Goren JL Friedmann JH Yawning : an aura for an L Dopa induced "off" in Parkinson disease *Neurology* 1998;50(3):823
 343. -Górecka-Bruzda A, Fureix C, Ouvrard A, Bourjade M, Hausberger M. Investigating determinants of yawning in the domestic (*Equus caballus*) and Przewalski (*Equus ferus przewalskii*) horses. *Naturwissenschaften.* 2016;103(9-10):72.
 344. -Gower AJ Effects of acetylcholine agonists and antagonists on yawning and analgesia in the rat *Europ J Pharmacology* 1987;139:79-89
 345. -Gower AJ, Berendsen HH, Broekkamp CL Antagonism of drug-induced yawning and penile erections in rats *Eur J Pharmacol* 1986;122(2):239-244
 346. -Gower J, Berendsen H et al. Yawning-penile erection syndrome as a model for putative dopamine autoreceptor activity *Eur J Pharmacol* 1984;103:81-89
 347. -Gower AJ Cholinergic mediated yawning and analgesia in rats: differential effects of muscarinic agonists and antagonists. 1987
 348. -Graves FC, Wallen K Androgen-induced yawning in rhesus monkey females is reversed with a nonsteroidal anti-androgen *Hormones and Behavior* 2006;49(2):233-236
 349. -Gray LP. The relationship between the 'superior constrictor swallow', clicking of the ears and ear

- disease. *J Laryngol Otol.* 1983;97(12):1121-1128
350. -Greco M, Baenninger R Effects of yawning and related activities on skin conductance and heart rate; *Physiology and behavior* 1991;50(5):1067-1069
 351. -Greco M, Baenninger R, Govern J. On the context of yawning: when, where, and why ? *Psych. Rec.* 1993;43:175-183
 352. -Greco M; Baenninger R Selfreport as a valid measure of yawning in the laboratory *Bull Psychonomic Soc* 1989;27:75-76
 353. -Grunauer PP, Walguarnery JW. Relative response to digital tablet devices and painting as sensory enrichment in captive chimpanzees. *Zoo Biol.* 2018
 354. -Gschwend J Yawning in a case with transecting glioma of the pons *Fortschr Neurol Psychiatr Grenzgeb* 1977;45(12):652-655
 355. -Guardia J, Casas M, et al The apomorphine test: a biological marker for heroin dependence disorder? *Addict Biol* 2002;7(4):421-426
 356. -Guardini G, Bowen J, Mariti Ch, Fatjó J, Sighieri C, Gazzano A. Influence of Maternal Care on Behavioural Development of Domestic Dogs (*Canis Familiaris*) Living in a Home Environment. *Animals (Basel).* 2017;7(12):93.
 357. -Guggisberg AG, Mathis J, Herrmann US, Hess CW. The functional relationship between yawning and vigilance. *Behav Brain Res* 2007;179(1):159-166
 358. -Guggisberg AG, Mathis J et al. Why do we yawn ? *Neurosci Biobehav Rev* 2010;34:1267-1276
 359. -Guggisberg AG, Mathis J et al. Why do we yawn? The importance of evidence for specific yawn-induced effects. *Neurosci Biobehav Rev.* 2011;35(5):1302-4.
 360. -Guggisberg A, Hess Ch. Clinical significance of yawning in disorders of consciousness and vigilance. *Epileptologie.* 2014;31:82-86.
 361. -Guilleminault Ch Sommeil et respiration Influence des états de vigilance sur la respiration *Rev Mal Resp* 1986;3:123-127
 362. -Gupta S, Mittal S. Yawning and its physiological significance. *Int J Appl Basic Med Res.* 2013;3(1):11-15
 363. -Gutierrez-Alvarez AM Do your patients suffer from excessive yawning? *Acta Psychiatrica Scandinavica* 2007;115(1):80-81
 364. -Gutierrez C, Rodriguez S, Trillo M, Vasquez A, Aguirre-Quispe W. Neuromyelitis optica spectrum disorder after BIBP COVID-19 vaccine: A case report. *Neuroimmunology Reports* 2023;3:100174
 365. -Güven B, Güven H, Selçuk Comoglu S. Migraine and Yawning. *Headache* 2017
 366. -Halder U, R Schenkel Das Riech-Gähnen bei Rindern (*Bovinae*) *Z Säugertierkunde* 1972;37:232-245
 367. -Hall KL Behaviour of monkeys towards mirror-images *Nature* 1962;196:1258-1261
 368. -Hadidian J Yawning in old world monkey; *Macaca nigra*; *Behaviour* 1980;75:133-147
 369. -Haker H, Rössler W Empathy in schizophrenia: impaired resonance *Eur Arch Psychiatry Clin Neurosci* 2009;259(6):352-361
 370. -Haker H, Kawohl W, Herwig U, Rössler W. Mirror neuron activity during contagious yawning-an fMRI study. *Brain Imaging Behav.* 2013;7(1):28-34
 371. -Hamilton LR et al. Characterization of the dopamine receptor system in adult rhesus monkeys exposed to cocaine throughout gestation *Psychopharmacology (Berl)*.2010;210(4):481-488
 372. -Handa J, Nakasu Y, Kidooka M Transient cerebral ischemia evoked by yawning *Sur Neurol* 1983;19:46-50
 373. -Harada KI. Paroxetine-induced excessive yawning *Psychiatry Clinical Neurosciences* 2006;60:260
 374. -Harnier S et al. Retropharyngeal tendinitis: a rare differential diagnosis of severe headaches and neck pain. *Headache.* 2008;48(1):158-161
 375. -Harr AL, Gilbert VR Do dogs show contagious yawning ? *Anim Cogn* 2009;12(6):833-837
 376. -Harrison W, Stewart J, McGrath PJ; Quitkin F Unusual side effects of clomipramine associated with yawning. *Can J Psychiatry* 1984;29:546
 377. -Harrison CJ Yawning in the greenfisk AUK. 1968;85:511
 378. -Hata TK, Kanenishi, et al. Real-time 3-D sonographic observation of fetal facial expression *J Obstet Gynaecol Res* 2005;31(4):337-340
 379. -Hayward MW, Hayward GJ. The impact of tourists on lion *Panthera leo* behaviour, stress and energetics. *Acta Theriologica* 2009;54:219-224.
 380. -Heaton JP, Varrin SJ Effects of streptozotocin-induced diabetes on dopaminergic functioning in the rat: analysis of yawning behavior. *Pharmacol Biochem Behav.* 1993;44(3):601-604
 381. -Heaton JPW, Varrin SV Metoclopramide decreases apomorphine-induced yawning and penile erection *Pharmacol Biochem Behav* 1991;38(4):917-920
 382. -Helt MS, Eigsti IM, Snyder PJ, Fein DA. Contagious yawning in autistic and typical development. *Child Dev.* 2010;81(5):1620-163
 383. -Helt MS, Fein DA, Vargas JE. Emotional contagion in children with autism spectrum disorder varies with stimulus familiarity and task instructions. *Dev Psychopathol.* 2019:1-11.
 384. -Hensch T, Blume A, Böttger D, Sander C, Niedermeier N, Hegerl U. Yawning in Depression: Worth

- Looking Into. *Pharmacopsychiatry*. 2015;48(3):118-120
385. -Herrelko ES, Buchanan-Smith HM, Vick SJ. Perception of Available Space During Chimpanzee Introductions: Number of Accessible Areas Is More Important Than Enclosure Size. *Zoo Biology* 2015;34(5):397-405
 386. -Herrmann US, Hess CW, Guggisberg AG, et al. Sleepiness is not always perceived before falling asleep in healthy, sleep-deprived subjects. *Sleep Med*. 2010;11(8):747-751
 387. -Heuser H Zum geruchlichen Beutefinden und Gähnen der Kreuzkröte *Zeitschr f TierPsychol* 1958;15:94-98
 388. -Heusner AP Yawning and associated phenomena *Physiological Review* 1946;25:156-168
 389. -Heym N, Kantini E, Checkley HL, Cassaday HJ. Tourette-like behaviors in the normal population are associated with hyperactive/impulsive ADHD-like behaviors but do not relate to deficits in conditioned inhibition or response inhibition. *Front Psychol*. 2014;5:946.
 390. -Hilgers F, Jansen H et al. Long-term results of olfaction rehabilitation using the nasal airflow inducing maneuver after total laryngectomy - Polite Yawning *Arch otolaryngol head neck* 2002;128:648-654
 391. -Hiltunen AJ, Lafolie P. et al. Subjective and objective symptoms in relation to plasma methadone concentration in methadone patients. *Psychopharmacology (Berl)*. 1995;118(2):122-126
 392. -Hipolide DC, Lobo LL; De Medeiros R; Neumann B; Tufik S Treatment with dexamethasone alters yawning behavior induced by cholinergic but not dopaminergic agonist. *Physiol Behav* 1999;65(4-5):829-32
 393. -Hipolide DC, Tufik S Paradoxical sleep deprivation in female rats alters drug-induced behaviors *Physiol Behav*. 1995;57(6):1139-1143
 394. -Hoff AE. Mouths wide open: yawning as a communicative behavior in dogs Thesis Colorado State University 2001
 395. -Holditch-Davis D Development of behaviors in preterm infants: relation to sleeping and waking *Nurs Res* 2003;52(5): 307317
 396. -Holle H, Warne K, Seth AK, Critchley HD, Ward J. Neural basis of contagious itch and why some people are more prone to it. *PNAS* 2012;109(48):19816-19821
 397. -Holmgren B and Urba-Holmgren R Interaction of cholinergic and dopaminergic influences on yawning behavior *Acta Neurobiol Exp* 1980;40:633-642
 398. -Holmgren R, Holmgren B, Rodriguez R, Gonzalez RM. Serotonergic modulation of yawning. *Pharmacol Biochem Behav* 1979;11(3):371-372
 399. -Holmgren R, Holmgren B, Rodriguez R Sex hormone influences on yawning behavior *Acta Neurobiol Exp* 1980;40:515-519
 400. -Holmgren B, Urba-Holmgren R, Trucios N, Zermeno M, Eguibar JR. Association of spontaneous and dopaminergic-induced yawning and penile erections in the rat. *Pharmacol Biochem Behav* 1985;22(1):31-5
 401. -Holmgren B, Budelli R, Urba-Holmgren JR, Eguibar M, Holmgren G, Baz-Tellez, Anias J. Food Anticipatory Yawning Rhythm in the Rat. *Acta Neurobiologiae Experimentalis* 1991;51:97-105.
 402. -Horner LH The neuropharmacology of upper airway motor control in the awake and asleep states: implications for obstructive sleep apnoea *Respiratory Research* 2001;2(5):286-294
 403. -Houston J Yawning and penile erection induced in Rats by Cortical Spreading Depression *Nature* 1971; 232; 274-275
 404. -Iacoboni M, Rizzolatti G Cortical mechanisms of human imitation *Science* 24/12/99; 286
 405. -Ide M, Kataoka A, Koriyama T Osame M Igata A New accompanying signs and symptoms of adrenoleukodystrophy *Rinsho Shinkeigaku* 1982;22;(2):112-119
 406. -Insel TR, Young LJ The neurobiology of attachment *Nature Reviews Neuroscience* 2001;2(2):129
 407. -Insabato L Considerazioni neurologiche sullo sbadiglio e sugli stiramanti, con speciale riguardo alle loro relazioni con le variazioni del tono muscolare, unitamente ad osservazioni sulle ipertonie da lesioni extrapiramidali e da lesioni piramidali. *Archivio generale di neurologia, psichiatria e psiconalisi* 1928;9:125-153
 408. -Isbir CA. Treatment of a Patient with Glossopharyngeal Neuralgia by the Anterior Tonsillar Pillar Method. *Case Rep Neurol*. 2011;3(1):27-31.
 409. -Izquierdo Ivan Now you'll start yawning and you won't know why *Trends Pharmacol Sci* 1988;9(4):119
 410. -Izumi K, Donaldson J, Barbeau A Yawning and stretching in rats induced by intraventricularly administered zinc *Life Science* 1973;11: 203-210
 411. -Jackson SR, Parkinson A, Kim SY, Schüermann M, Eickhoff SB. On the functional anatomy of the urge-for-action. *Cogn Neurosci*. 2011;2(3-4):227-243.
 412. -Jacobs H, Pakalnis A. Premonitory Symptoms in Episodic and Chronic Migraine From a Pediatric Headache Clinic. *Pediatric Neurology* 2019;97:26-29
 413. -Jacome D Compulsive yawning as migraine premonitory symptom. *Cephalalgia* 2001;21(5):623-5
 414. -Jacome D Primary yawning headache. *Cephalalgia* 2001;21(6):697-699

415. -Jacome D Extracerebral yawning pain Cephalalgia 2004;24;(5):411-413
416. -Jolicœur F Atypical neuroleptic-like behavioral effects of neurotensin Brain Res Bull. 1993;32(5):487-491
417. -Joly-Mascheroni RM, Senju A, Sheperd AJ Dogs catch human yawns Biology letters Animal Behaviour. 2008;4(5):446-448
418. -Joly-Mascheroni R, Forster B, Llorente M, Valsera C, Gomara A, Crailsheim D, Calvo-Merino B. Chimpanzees yawn when observing an android yawn. Sci Rep. 2025;15(1):18002
419. -Joshi S, Bayat A, Gagnon L, Shields DC, Koubeissi MZ. Yawning induced by focal electrical stimulation in the human brain. Epilepsy Behav. 2016;66:1-3
420. -Jung N, Ahn B et al. A case of parakinesia brachialis oscitans. Clinical Neurology and Neurosurgery. 2012;114(2):156-158
421. -Jurko MF, Andy OJ Post-lesion yawning and thalamotomy site Appl Neurophysiol 1975;38:73-79
422. -Kanenishi K, Hanaoka U, Noguchi J, Marumo G, Hata T. 4D ultrasound evaluation of fetal facial expressions during the latter stages of the second trimester. Int J Gynaecol Obstet. 2013;121(3):257-260
423. -Kang P, Dhand A. Movement of a paralyzed arm with yawning. Neurology. 2015;84(16):e118.
424. -Kapitány R, Nielsen M. Are Yawns really Contagious? A Critique and Quantification of Yawn Contagion. Adaptive Human Behavior and Physiology (2017). doi:10.1007/s40750-017-0059-y
425. -Kaplan KA, Itoi A, Dement WC. Awareness of sleepiness and ability to predict sleep onset: can drivers avoid falling asleep at the wheel? Sleep Med. 2007;9(1):71-79.
426. -Kasuya Y, Murakami T, et al. Does yawning represent a transient arousal-shift during intravenous induction of general anesthesia? Anesth Analg 2005;101(2):382-384
427. -Khan MH, Kunselman AR, Leuenberger UA, Davidson WR et al. Attenuated sympathetic nerve responses after 24 hours of bed rest. Am J Physiol Heart Circ Physiol. 2002; 282;6:H2210-2215
428. -Kim TH, Lee JJ, et al. Efficacy of assessment in fetal behaviour by four dimensional ultrasonography. J Obstetrics Gynaecology 2010;30(5):439-443
429. -Kimura H, Yamada K, Nagashima M, Matsumoto S Role of adrenergic neuronal activity in the yawning induced by tacrine and NIK-247 in rats. Pharmacol Biochem Behav 1992;43(4):985-91
430. -Kimura H, Yamada K, Nagashima M, Furukawa T Involvement of catecholamine receptor activities in modulating the incidence of yawning in rats. Pharmacol Biochem Behav 1996;53(4):1017-21
431. -Kis A, KatinkaTóth, Kanizsár O, Topál J. The effect of oxytocin on yawning by dogs (Canis familiaris) exposed to human yawns. Applied Animal Behaviour Science 2020;223 n° 104916
432. -Kishida K Temporal change of subsidiary behavior in monotonous work. J of Human Ergology 1973;2:75-89
433. -Kita I, Kubota N, Yanagita S, Motoki C Intracerebroventricular administration of corticotropin-releasing factor antagonist attenuates arousal response accompanied by yawning behavior in rats. Neurosci.Letter 2008;433(3):205-208
434. -Kita I, Yoshida Y, Nishino S. An activation of parvocellular oxytocinergic neurons in the paraventricular nucleus in oxytocin-induced yawning and penile erection. Neurosci Res. 2006;54(4):269-275
435. -Kita I, Seki Y, Nakatani Y, Fumoto M, Oguri M, Sato-Suzuki I, Arita H. Corticotropin-releasing factor neurons in the hypothalamic paraventricular nucleus are involved in arousal/yawning response of rats. Behav Brain Res. 2006;169(1)48-56.
436. -Kita I, Sato-Suzuki et al. Yawning responses induced by local hypoxia in the paraventricular nucleus of the rat. Behavioural Brain Research 2000;117(1-2):119-126
437. -Klécha A, Hafian H, Devauchelle B, Lefèvre B. A report of post-traumatic Eagle's Syndrome. Int J Oral Maxillofac Surg. 2008;37(10):970-2
438. -Klein DF Repeated observations of yawning; clitoral engorgement; and orgasm associated with fluoxetine administration. J Clin Psychopharmacol 1989;9(5):384
439. -Klein DF False suffocation alarms, spontaneous panics, and related conditions. an integrative hypothesis. Arch Gen Psychiatry. 1993;50(4):306-317
440. -Kilduff CL, Casswell EJ, Salam T, Hersh D, Ortiz-Perez S, Ezra D. Use of Alleviating Maneuvers for Periocular Facial Dystonias. JAMA Ophthalmol. 2016
441. -Koch P Variation of behavioral and physiological variables in children attending kindergarten and primary school Chronobiol Int 1987;4(4):525-3
442. -Kotake KT, Yamaguchi ST, Mukai Y, Zhou Z, Norimoto H. Yawning and Its Temperature-Dependent Modulation in Leopard Geckos. Zoolog Sci. 2025;42(1).
443. -Kozintsev A, Butovskaya M. Disinhibition of anti-cultural behavior: A means of adaptation in early hominids? in Ullrich H. (ed.) Hominid Evolution: Lifestyles and Survival Strategies. Gelsenkirchen-Schwelm: Archaea, 1999, pp. 262-268.
444. -Kostrzewa RM, Brus R Is dopamine-agonist induced yawning behavior a D3 mediated event? Life Sci 1991;48(26)129.
445. -Kostrzewa RM, Brus R Ontogenic homologous supersensitization of quinpirole-induced yawning in

- rats. *Pharmacol Biochem Behav.* 1991;39(2):517-519.
446. -Kostrzewa RM, Brus R, Rykaczewska M, Plech A. Low-dose quinpirole ontogenically sensitizes to quinpirole-induced yawning in rats. *Pharmacol Biochem Behav.* 1993;44(2):487-489.
447. -Krasnianski M, et al Yawning despite trismus in a patient with locked-in syndrome caused by a thrombosed megadolichobasilar artery. *Clin Neurol Neurosurg.* 2003;106(1):44-46
448. -Krantz M Repetitive yawning associated with cardiac tamponade *Am J Cardiol* 2004;94:701-705
449. -Krestel H, Weisstanner C, Hess CW, Bassetti CL, Nirrko A, Wiest R. Insular and caudate lesions release abnormal yawning in stroke patients. *Brain Struct Funct.* 2015;220(2):803-812
450. -Krestel H, Bassetti C, Walusinski O. Yawning - Its anatomy, chemistry, role, and pathological considerations. *Prog. Neurobiol* 2018;161:61-78.
451. -Kret ME, Jaasma L, Bionda T, Wijnen JG. Bonobos (*Pan paniscus*) show an attentional bias toward conspecifics' emotions. *Proc Natl Acad Sci U S A.* 2016 Mar 14
452. -Kuba R, Musilová K, Brázdil M, Rektor I. Peri-ictal yawning lateralizes the seizure onset zone to the nondominant hemisphere in patients with temporal lobe epilepsy. *Epilepsy Behav.* 2010;19(3):311-4
453. -Kuballa G, Nowak P, et al. Central effects of nafadotride, a dopamine D3 receptor antagonist, in rats. Comparison with haloperidol and clozapine. *Pharmacol Rep* 2005;57(2)161-169
454. -Kubota N, Amemiya S, Motoki C, Otsuka T, Nishijima T, Kita I. Corticotropin-releasing factor antagonist reduces activation of noradrenalin and serotonin neurons in the locus coeruleus and dorsal raphe in the arousal response accompanied by yawning behavior in rats. *Neurosci Res.* 2012;72(4):316-323
455. -Kubota N, Amemiya S, Yanagita S, Nishijima T, Kita I. Emotional stress evoked by classical fear conditioning induces yawning behavior in rats. *Neurosci Lett.* 2014;566:182-187
456. -Kubota N, Amemiya S, Tanagita S, Nishijima T, Kita I. Central nucleus of the amygdala is involved in induction of yawning response in rats. *Behavioural Brain Research* 2019;371:111974
457. -Kubota N, Amemiya S, Yanagita S, Kita I. Neural pathways from the central nucleus of the amygdala to the paraventricular nucleus of the hypothalamus are involved in induction of yawning behavior due to emotional stress in rats. *Behav Brain Res.* 2022 Sep 1:114091.
458. -Kumar D, Arora DR. The mystery behind "yawning": a physiological insight. *Journal of Health and Allied Sciences* 2020
459. -Kurjak A, Azumendi G, et al Fetal hand movements and facial expression in normal pregnancy studied by four-dimensional sonography *J. Perinat. Med.* 2003;31:496-508
460. -Kurjak A, Azumendi G, et al. The potential of 4D ultrasonography in the assessment of fetal awareness *J Perinat Med* 2005;33:46-53
461. -Kurjak A, M Stanojevic et al Behavioral pattern continuity from prenatal to postnatal life a study by four dimensional (4D) ultrasonography *J Perinat Med* 2004;32:346-353
462. -Kutty RK, Alapatt JP, Govindan A. Intractable Yawning as a Predominant Symptom of Temporal Lobe Ganglioglioma: Case Report and Review of Literature. *Asian J Neurosurg.* 2018;13(1):102-104.
463. -Lagares A et al Short-lasting unilateral neuralgiform headache with conjunctival injection and tearing syndrome treated with microvascular decompression of the trigeminal nerve *Neurosurgery* 2005;56(2):413
464. -Laing J, Ogilvie R EEG correlats of yawning during sleep onset *Sleep Research* 1988;17:98
465. -Lal S, Tesfaye Y, Thavundayil JX, Skorzewewska A, Schwartz G Effect of time-of-day on yawning response to apomorphine in normal subjects *Neuropsychobiology* 2000;41(4):178-180
466. -Lal S, Grassino A, Thavundayil YX, Bubrovsky B A simple method for study of yawning in man induced by the dopamine receptor agonist, apomorphine. *Progr Neuropsychopharmacol Biol Psychiatry* 1987;11: 223-228
467. -Lal S, Tesfaye Y et al Apomorphine: clinical studies on erectile impotence and yawning. *Prog Neuropsychopharmacol Biol Psychiatry* 1989;13(3-4):329-39
468. -Lal S Apomorphine in the evaluation of dopaminergic function in man *Prog Neuropsychopharmacol Biol Psychiatry* 1988;12(2-3):117-64
469. -Lal S, Thavundayil JX, et al. Induction of tolerance of dopaminergic responses in man. *J Neural Transm.* 2008;115(8):1189-1198
470. -Lana-Peixoto MA, Callegaro D, Talim N, Talim LE, Pereira SA, Campos GB. Pathologic yawning in neuromyelitis optica spectrum disorders. *Mult Scler Relat Disord.* 2014;3(4):527-32.
471. -Lanari A, Delbono O The yawning and stretching sign in hemiplegics *Medicina (B Aires)* 1983;43(3):355-356
472. -Lane JD Effects of brief caffeinated-beverage deprivation on mood, symptoms, and psychomotor performance. *Pharmacol Biochem Behav.* 1997;58(1):203-208
473. -Lane JD, Phillips-Bute BG Caffeine deprivation affects vigilance performance and mood. *Physiol Behav.* 1998;65(1):171-175
474. -Lanthorn TH, Isaacson RL Stretching and yawning: a role of glutamate *Psychopharmacology (Berl)* 1979;65(3)317-318
475. -Laping NJ, Ramirez VD Prolactin-induced yawning behavior requires an intact nigro-striatal dopamine

- system *Pharmacol Biochem Behav* 1988;29(1):59-62
476. -Laping NJ, Ramirez VD Prolactin induces yawning and the stretching yawning syndrome in young adult male rats. *Hormones & Behavior* 1986;20:49-59
 477. -Laping NJ, Ramirez VD. Yawning behavior in male rats is associated with decreases in in vivo DOPAC efflux from the caudate nucleus. *Behav Brain Res.* 1990;36(1-2):65-72.
 478. -Lapresle J La voie dento-olivaire : mise en évidence, trajet et signification *Bull Acad Nat Med* 1984, 168, 336-341 séance du 6/3/84.
 479. -Larsson k, S Ahlenius Brain and sexual behavior *Annals of the New York Academy of Sciences* 1999;877:292-308
 480. -Laurell K, Artto V, Bendtsen L, Hagen K, Häggström J, Linde M, Söderström L, Tronvik E, Wessman M, Zwart JA, Kallela M. Premonitory symptoms in migraine: A cross-sectional study in 2714 persons. *Cephalalgia.* 2015 Dec 6.
 481. -Laskiewicz A The role of the Eustachius tube and the tympanal muscles in yawning *Rev Laryngol Otol Rhinol.* 1953;74(5-6)
 482. -Laskiewicz A Yawning with regard to the respiratory organs and the ear. *Acta Oto laryngologica (Stockholm)* 1953;43(2-3):267-270
 483. -Laurent-Vannier A, Fadda G, Laigle P, Dusser A, Leroy-Malherbe V Foix-Chavany-Marie syndrome in a child caused by a head trauma *Rev Neurol (Paris)* 1999;155(5):387-90
 484. -Lebit F-D, Vladareanu R. The Role of 4D Ultrasound in the Assessment of Fetal Behaviour. *Maedica.* 2011;6(2): 120 -127
 485. -Lee SJ, Yie K, Chon SB. Juvenile First Rib Fracture Caused by Morning Stretching. *J Emerg Med.* 2012;43(2):e 119-121
 486. -Leger L, Charnay Y, Hof PR, Bouras C, Cespuglio R Anatomical distribution of serotonin-containing neurons and axons in the central nervous system of the cat. *J Comp Neurol* 2001;433(2):157-82
 487. -Lehmann H Yawning : a homeostatic reflexe and its psychological signifiacnce *Bull Menninger Clinic* 1979;43:123-126
 488. -Leone A, Mignini M, Mancini G, Palagi E. Aggression does not increase friendly contacts among bystanders in geladas (*Theropithecus gelada*) *Primates.* 2010;51(4):299-305
 489. -Leone A, Ferrari PF, Palagi E. Different yawns, different functions? Testing social hypotheses on spontaneous yawning in *Theropithecus gelada*. *Scientific Reports* 2014;4:4010
 490. -Leonhardt M, Abele M, Klockegether T, Dickgans J, Weller M Pathological yawning (chasm) associated with periodoc leg movements in sleep: cure by levodopa. *J Neurolog* 1999;246(7):621-622
 491. -Lepp FH Remarques sur la signification physiologique du bâillement *Bull Group Int Rech Sci Stomatol Odontol* 198225:251-290
 492. -Lesimple C. Indicators of Horse Welfare: State-of-the-Art. *Animals* 2020;10(2):294
 493. -Liang Z, Khotchasing K, Hoang NH. Catching a yawn: A multimodal experimental protocol for investigating sleepiness under visual and auditory yawning stimuli featuring human and digital characters. *MethodsX.* 2026;16:103921.
 494. -Liecey Nouvelle observation de bâillement convulsif périodique *Le Courrier Médical* 1879;29:334-336
 495. -Liégey Deux observations de bâillements intermittents *Gazette médicale de Strasbourg* 1851
 496. -Li SM, Collins GT et al. Yawning and locomotor behavior induced by dopamine receptor agonists in mice and rat. *Behav Pharmacol.* 2010; 21(3): 171–181.
 497. -Liang AC, Grace JK, Tompkins EM, Anderson DJ. Yawning, acute stressors, and arousal reduction in Nazca booby adults and nestlings. *Physiology & Behavior* 2015;140:38–43
 498. -de Lima O, Munhoz R, Becker N, Teive H. Parakinesia Brachialis Oscitans. Report of three cases. *Parkinsonism Relat Disord.* 2012;18(2):204–6.
 499. -Liu YC, Sachs BD, Salamone JD. Sexual behavior in male rats after radiofrequency or dopamine-depleting lesions in nucleus accumbens. *Pharmacol Biochem Behav.* 1998;60(2):585-592
 500. -Liu L, Ji Y, Gao Y, Ping Z, Kuang L, Li T, Xu W. A Novel Fatigue Driving State Recognition and Warning Method Based on EEG and EOG Signals. *J Healthc Eng.* 2021 Nov 22;2021:7799793
 501. -Lobo LL, Neumann BG, Eidman DS, Tufik S Effects of REM sleep deprivation of ACTH-induced yawning. *Pharmacology* 1990;40(3):174-178
 502. -Lobo LL, de Medeiros R, Hipolide DC, Tufik S. Atropine increases pilocarpine-induced yawning behavior in paradoxical sleep deprived rats. *Pharmacol Biochem Behav.* 1995;52(3):485-488.
 503. -Loder A What is the evolutionary advantage of migraine ? *Cephalalgia* 2002;22:624-632
 504. -Longoni R et al Permissive role of D1 receptor stimulation by endogenous dopamine for the expression of postsynaptic D2 mediated behavioural responses Yawning in rats *Eur J Pharmacol* 1987;134(2):163-73
 505. -Louboungou M, JR Anderson Yawning, scratching, and protruded lips : differential conditionability of natural acts in Pigtail Monkeys *Primates* july 1987;23(3):367-375
 506. -Louwerse E Forced yawning as a pseudobulbar sign in amyotrophic lateral sclerosis *J Neuroscience Research* 1998, sup, 392

507. -Lum L et al. Hyperventilation-induced high-amplitude rhythmic slowing with altered awareness: a video-EEG comparison with absence seizures. *Epilepsia* 2002;43(11):1372-1378
508. -Luttenberger F The problem of yawning in reptiles *Z Tierpsychol* 1975; 37; 2; 113-137
509. -Lutz C, Tiefenbacher S, Meyer J, Novak M. Extinction deficits in male rhesus macaques with a history of self-injurious behavior. *Am J Primatol.* 2004;63(2):41-48
510. -Lynch MR Dissociation of autoreceptor activation and behavioral consequences of low doses apomorphine treatment *Prog Neuro-Psychopharmacol & Biol Psychiat* 1991;15:689-698
511. -Macapinlac MP, Olson JA A lethal hypervitaminosis A syndrome in young monkeys (*Macacus fascicularis*) following a single intramuscular dose of a water-miscible preparation containing vitamins A, D2 and E. *Int J Vitam Nutr Res* 1981;51(4):331-341
512. -Madsen EA, Persson T. Contagious yawning in domestic dog puppies (*Canis lupus familiaris*): the effect of ontogeny and emotional closeness on low-level imitation in dogs. *Anim Cogn.* 2013;16(2):233-240
513. -Madsen EA, Persson T, Sayehli S, Lenninger S, Sonesson. Chimpanzees show a developmental increase in susceptibility to contagious yawning: a test of the effect of ontogeny and emotional closeness on yawn contagion. *PLoS One.* 2013;8(10):e76266
514. -Maeda N et al Septohippocampal cholinergic pathway and penile erections induced by dopaminergic and cholinergic stimulants *Brain Research* 1990;537:163-168
515. -Maestriperi D, Schino G, Aureli F, Troisi P. A modest proposal: displacement activities as an indicator of emotions in primates. *Anim Behav* 1992;44:967-979
516. -Mafessoni F, Lachmann M. The complexity of understanding others as the evolutionary origin of empathy and emotional contagion. *Scientific Reports* 2019;9:5794.
517. -Mahajan A, Zillgitt A, Bowyer SM, Sidiropoulos C. Sensory Trick in a Patient with Cervical Dystonia: Insights from Magnetoencephalography. *Brain Sciences* 2018;8(4):51
518. -Major CA, Kelly BJ, Novak MA, Davenport MD, Stonemetz KM, Meyer JS. The anxiogenic drug FG7142 increases self-injurious behavior in male rhesus monkeys (*Macaca mulatta*). *Life Sci.* 2009;85(21-22):753-758
519. -Mancuso F, Porta R, Calignano A, Di Pierro P, Sommella MG, Esposito C Substance P and its transglutaminase-synthesized spermine derivative elicit yawning behavior via nitric oxide in rats. *Peptides* 2001;22(9):453-457
520. -Mariscal MG, Oztan O, Rose SM, Libove RA, Jackson LP, Sumiyoshi RD, Trujillo TH, Carson DS, Phillips JM, Garner JP, Hardan AY, Parker KJ. Blood oxytocin concentration positively predicts contagious yawning behavior in children with autism spectrum disorder. *Autism Res.* 2019;12(8):1156-1161
521. -Marchese G, Ruiu S, Casti P, Bartholini F, Saba P, Gessa GL, Pani L. Carmoxirole is able to reduce amisulpride-induced hyperprolactinemia without affecting its central effect. *Eur J Pharmacol.* 2002;447(1):109-114
522. -Marcus N Yawning: analytic and therapeutic considerations *Int J child Psychotherapy* 1973;2(4):406-418 pdf
523. -Marini JL Serotonergic and dopaminergic effects on yawning in the cat *Pharmacol Biochemi Behav*, 1981;15:711-715
524. -Mariscal MG, Oztan O, Rose SM, Libove RA, Jackson LP, Sumiyoshi RD, Trujillo TH, Carson DS, Phillips JM, Garner JP, Hardan AY, Parker KJ. Blood oxytocin concentration positively predicts contagious yawning behavior in children with autism spectrum disorder. *Autism Res.* 2019 May 27.
525. -Marraffa A, Lekander M, Solsjö P, Olsson MJ, Lasselin J, Axelsson J. Yawning, a thermoregulatory mechanism during fever? A study of yawning frequency and its predictors during experimentally induced sickness. *Physiol Behav* 2017
526. -Marsden CD Blepharospasm-oro-mandibular dystonia syndrom *J Neurology Neurosurgery Psychiatry* 1976;39(12):1204-1209
527. -Martelle JL, Claytor R, Ross JT, Reboussin BA, Newman AH, Nader MA. Effects of two novel D3-selective compounds, NGB 2904 and CJB 090, on the reinforcing and discriminative stimulus effects of cocaine in rhesus monkeys. *J Pharmacol Exp Ther.* 2007;321(2):573-582
528. -Martelle SE, Nader SH, Czoty PW, John WS, Duke AN, Garg PK, Garg S, Newman AH, Nader MA. Further Characterization of Quinpirole-Elicited Yawning As a Model of Dopamine D3 Receptor Activation in Male and Female Monkeys. *J Pharmacol Exp Ther.* 2014;350(2):205-211
529. -Martinac AD, Waters S, Lloyd RA, Bilston LE. Biomechanics of contagious yawning: Insights into cranio-cervical fluid dynamics and kinematic consistency. *Respir Physiol Neurobiol.* 2026;343:104575.
530. -Marx V, Nagy E. Fetal Behavioural Response to Maternal Voice and Touch. *PlosOne*, June 8, 2015
531. -Masi G, Brovedani P Tourette's syndrome in children: neurobiological issues in pathophysiology. *Panminerva Med* 2000;42(1):61-7
532. -Massen JJ, Vermunt DA, Sterck EH. Male Yawning Is More Contagious than Female Yawning among Chimpanzees (*Pan troglodytes*). *PLoS One.* 2012;7(7):e40697.

533. -Massen JJ, Dusch K, Eldakar OT, Gallup AC. A Thermal Window for Yawning in Humans: Yawning as a Brain Cooling Mechanism. *Physiology Behavior* 2014, 2014;130:145-8.
534. -Massen JJ, Church AM and Gallup AC. Auditory Contagious Yawning in Humans: An Investigation into Affiliation and Status Effects. *Front. Psychol.* 2015;6:1735.
535. -Massen JJ, Slipogor V, Gallup AC. An Observational Investigation of Behavioral Contagion in Common Marmosets (*Callithrix jacchus*): Indications for Contagious Scent-Marking. *Front Psychol.* 2016;7:1190.
536. -Massen JJM, Gallup AC. Why contagious yawning does not (yet) equate to empathy. *Neurosci Biobehav Rev.* 2017;80:573-585.
537. -Masuzaki H Color Dopplerimaging of foetal yawning Ultrasound in obstetric & gynecology 1996;8(5):355-356
538. -Matikainen J, Elo H Does yawning increase arousal through mechanical stimulation of the carotid body? *Med Hypotheses* 2008;70(3):488-492
539. -Matsangas P, McCauley ME Yawning as a behavioral marker of mild motion sickness and sopite syndrome. *Aviat Space Environ Med* 2014;85:658-661
540. -Matsumoto S, Yamada K, Nagashima M, Matsuo N, Shirakawa K, Furukawa T Potentiation by serotonergic inhibition of yawning induced by dopamine receptor agonists in rats. *Pharmacol Biochem Behav* 1989;32(3): 815-8
541. -Matsumoto S et al. Occurrence of yawning and decrease of prolactin levels via stimulation of dopamine D2-receptors after administration of SND 919 in rats *Naunyn-Schmiedeberg's Arch Pharmacol* 1989;340:21-25
542. -McCorkell S Fractures of the styloid process and stylohyoid ligament: an uncommon injury *J of Trauma* 1985;25(10):1010-1012
543. -McCutcheon FH Stimulation, control and phylogenetic projection of the teleostean yawn reflex *Comp Biochem Physiol* 1970;34:339-344
544. -McGinnis J Fracture of an ossified stylohyoid bone *Arch Otolaryngol* 1981;107:460
545. -McKenzie AA The tonsillar evacuation hypothesis of yawning behaviour. *South african J of Sci.* 1994;90:64-66
546. -McLean P Evolutionary psychiatry and the triune brain. *Psychological Medicine* 1985;15(2):19-221
547. -McLean JD, Forsythe RG, Kapkin IA Unusual side effects of clomipramine associated with yawning *Can J Psychiatry* 1983;28(7):569-70
548. -McManus B, Devine P, Brandsetter RD A fetal yawn? *N Engl J Med* 1997;336:1329-1330
549. -McNamara P. Yawning, an evolutionary psychology of sleep and dreams. Praeger ed. 2004:59-60
550. -McNeil JE, Warrington EK Prosopagnosia: a reclassification. *Q J Exp Psychol A* 1991;43(2):267-287
551. -Medrano V, Selles-Galiana MF, et al. Bostezo y epilepsia del lobulo temporal *Revista de Neurologia* 2005;41(1):63-64
552. -Meira E Cruz M. Yawning as a clinical clue? Revisiting COMISA phenotypes in sleep-disordered breathing. *Dent Med Probl.* 2026;63(1):5-7.
553. -Melis MR, Argiolas A, Gessa Apomorphine-induced penile erection and yawning : site of action in brain *Brain Research* 1987;415:98-104
554. -Melis MR, A Argiolas, GL Gessa Evidence that apomorphine induces penile erection and yawning by releasing oxytocin in the central nervous system *European J Pharmacol* 1989;164:565-570
555. -Melis MR, Spano MS, Succu S, Argiolas A Activation of gamma-aminobutyric acid(A) receptors in the paraventricular nucleus of the hypothalamus reduces apomorphine-, N-methyl-D-aspartic acid- and oxytocin-induced penile erection and yawning in male rats. *Neurosci Lett* 2000; 28;1(2-3):127-30
556. -Melis MR, R Stancampiano, A Argiolas Prevention by ng-nitro-l-arginine methyl ester of apomorphine- and oxytocin-induced penile erection and yawning: site of action in the brain *Pharmacol Biochem Behav* 1994;48(3):799-804
557. -Melis MR, Succu S, et al. Dopamine agonists increase nitric oxide production in the paraventricular nucleus of the hypothalamus: correlation with penile erection and yawning. *Eur J Neurosci* 1996;8(10):2056-63
558. -Melis MR, Argiolas A Role of central nitric oxide in the control of penile erection and yawning *Prog Neuropsychopharmacol Biol Psychiatry* 1997;21(6):899-922 (abstract)
559. -Melis MR, et al Nitroglycerin-induced penile erection and yawning in male rats: mechanism of action in the brain *Brain Res Bull* 1995;36(6):527-531
560. -Melis MR, Argiolas A Role of nitric oxide in penile erection and yawning induced by 5-HT1c receptor agonists in male rats *Naunyn-Schmiedeberg's arch Pharmacol* 1995;351:439-445
561. -Melis MR, Argiolas A Yawning role of hypothalamic paraventricular nitric oxide *Acta Pharmacologica Sinica* 1999;20(9):778-788
562. -Melis MR et al Dopamine agonists increase nitric oxide production in the paraventricular nucleus of the hypothalamus: correlation with penile erection and yawning *Europ J Neurosci* 1996;8:2056-2063
563. -Melis MR, Argiolas A Apomorphine and Oxytocin induced penile erection and yawning in intact and castrated male rats : effect of sexual steroids *Neuroendocrinology* 1994;59:349-354

564. -Melis MR, Argiolas A Nitric oxide synthase inhibitors prevent apomorphine and oxytocin-induced penile erection and yawning in male rats *Brain Res Bull* 1993;32(1):71-74
565. -Melis MR, Stancampiano R, Argiolas A Hippocampal oxytocin mediates apomorphine-induced penile erection and yawning. *Pharmacol Biochem Behav* 1992;42(1):61-6
566. -Melis MR et Argiolas A Nitric oxide donors induce penile erection and yawning when injected in the central nervous system of male rats *European J Pharmacology* 1995;294:1-9
567. -Melis MR et al Oxytocin increases nitric oxide production in the paraventricular nucleus of the hypothalamus of male rats: correlation with penile erection and yawning *Regulatory Peptides* 1997;69:105-11
568. -Melis MR , A.Argiolas. Reduction of drug-induced yawning and penile erection and of noncontact erections in male rats by the activation of GABAA receptors in the paraventricular nucleus: involvement of nitric oxide *Eur J Neurosci* 200215(5):852-60
569. -Melis MR et al. Prevention by morphine of apomorphine- and oxytocin-induced penile erection and yawning: involvement of nitric oxide *Naunyn-Schmiedeberg's arch Pharmacol* 1997;600:355-595
570. -Melis MR et al Prevention by morphine of N-Methyl-D-Aspartic Acid induced penile erection and yawning: involvement of Nitric Oxide *Brain Res Bull* 1997;44(6):689-694
571. -Melis MR, Succu S. EP 60761 and EP 50885, two hexarelin analogues, induce penile erection in rats. *Eur J Pharmacol.* 2000;404(1-2):137-143
572. -Melis MR, Succu S, et al. Extra-cellular dopamine increases in the paraventricular nucleus of male rats during sexual activity *Eur J Neurosci* 2003;17:1266-1272
573. -Melis MR, Stancampiano R, Argiolas A. Penile erection and yawning induced by paraventricular NMDA injection in male rats are mediated by oxytocin. *Pharmacol Biochem Behav.* 1994;48(1):203-207
574. -Menin D, Aureli T, Dondi M. Two forms of yawning modulation in three months old infants during the Face to Face Still Face paradigm. *PLoS One.* 2022;17(2):e0263510.
575. -Menin D, Veronese P, Gervasi MT, Oster H, Dondi M. Fetal yawning and mouth openings: Frequency, developmental trends, and association with birth weight. *PLoS One.* 2026;21(2):e0341339.
576. -Meltzoff AN, Moore MK Newborn infants imitate adult facial gestures. *Child Dev* 1983;54(3)702-9
577. -Meltzoff AN, Moore MK Imitation of facial and manual gestures by human neonates. *Science* 1977;198(4312):74-78
578. -Menin D, Casrabile A, Tenuta F, Dondi M. Identifying Fetal Yawns Based on Temporal Dynamics of Mouth Openings: A Preterm Neonate Model Using Support Vector Machines (SVMs). *PloS One* 2020;14 (12), e0226921
579. -Menin D, Ballardini E, Panebianco R, Garani G, Borgna-Pignatti C, Oster H, Dondi M. Factors affecting yawning frequencies in preterm neonates. *PLoS One* 2022;17(5):e0268083.
580. -Meshavkin VK, Batishcheva EY, Kost NV, Sokolov OY, Trufanova AV, Samonina GE. Effects of Pro-Gly-Pro tripeptide on the dopamine system. *Bull Exp Biol Med.* 2011;151(4):429-431
581. -Michalek M, Marschollek K, Kuliczowski W, Waliszewska-Prosót M, Wojakowska A, Madziarska K, Martynowicz H. An unusual case of yawning during sleep associated with sleep bruxism and obstructive sleep apnea-a case report. *Front Med (Lausanne).* 2025;12:1596512.
582. -Miklosi A The ethological analysis of imitation. *Biol Rev Camb Philos Soc* 1999;74(3)347-374
583. -Millen A, Anderson JR Neither infants nor toddlers catch yawns from their mothers. *Biol Letters* 2011;7(3):440-442
584. -Miller E A comparative study of facial expressions of two species of pinnipeds *Behaviour* 1975;53(3-4):268-284
585. -Miller ML, Gallup AC et al. Handling stress initially inhibits, but then potentiates yawning in budgerigars (*Melopsittacus undulatus*). *Animal Behaviour.* 2010;80(4):615-619
586. -Miller ML, Gallup AC, Vogel AR, Vicario SM, Clark AB. Evidence for contagious behaviors in budgerigars (*Melopsittacus undulatus*): An observational study of yawning and stretching. *Behav Processes.* 2012;89(3):264-270
587. -Miller ML, Gallup AC, Vogel AR, Clark AB. Auditory disturbances promote temporal clustering of yawning and stretching in small groups of budgerigars (*Melopsittacus undulatus*). *J Comp Psychol.* 2012
588. -Millan MJ, Dekeyne A S33084, a novel, potent, selective, and competitive antagonist at dopamine D(3)-receptors: II. Functional and behavioral profile compared with GR218,231 and L741,626 *J Pharmacol Exp Ther* 2000;293(3):1063-1073
589. -Mitsunobu F, Ashida K, et al. Yawning associated with anterior chest pain in a patient with asthma. *Annual reports of Misasa Medical Center, Okayama University Medical School.* 2003
590. -Mizukami K Very young infants yawn or cry after watching animated programs development *Behavioral Pediat* 1990;11(3):3
591. -Minagar A, Sheremata WA Glossopharyngeal neuralgia and MS *Neurology* 2000;54(6):1368-70
592. -Miyazaki M, Y Tanaka et al Attack of yawning, case report *Rinsho Shinkeigaku* 1985;25(9):1007-9
593. -Modell JG Repeated observations of yawning, clitoral engorgement, and orgasm associated with

- fluoxetine administration. *J Clin Psychopharmacol* 1989;9(1):63-5
594. -Mogilnicka E, Wedzony K, Klimek V, Czyrak A Desipramine induces yawning behaviour in rats *Neuropharmacology* 1986;25(7):783-6
 595. -Mogilnicka E, Klimek V Drugs affecting dopamine neurons and yawning behavior. *Pharmacol Biochem Behav* 1977;7:303-305
 596. -Mogilnicka E REM sleep deprivation changes behavioral response to catecholaminergic and serotonergic receptor activation in rats *Pharmacol Biochem Behav* 1981;15(1):149-151
 597. -Mogilnicka E, Boissard CG, Delini-Stula A. Effects of apomorphine, TL-99 and 3-PPP on yawning in rats. *Neuropharmacology*. 1984;23(1):19-22
 598. -Mohandoss AA, Thavarajah R. Exploring the incidence and etiopathogenesis of pathological yawning as adverse side effect of psychotropic drugs. *Neuropsychopharmacol Hung.* 2023;25(4):194-205.
 599. -Montagu A On Yawning *JAMA*;1962;732:152
 600. -Moore J Some psychological aspects of yawning *The Journal of General Psychology* 1942;27:289-294
 601. -Mora S et al LHRH antagonizes yawning and genital grooming induced by apomorphine in rats. *Pharmacol Biochem Behav.* 1989;31(3):717-720
 602. -Morelli M et al Antagonism of apomorphine-induced yawning by SCH 23390: Evidence against the autoreceptor hypothesis *Psychopharmacology* 1986;89:259-260
 603. -Morton HJV Yawning during thiopentone induction *Br J Anaesthesia* 1962;34:133-134
 604. -Moyaho A et al Induced grooming transitions and open field behaviour differ in high- and low-yawning sublines of Sprague-Dawley rats *Animal Behavior* 1995;50:61-72
 605. -Moyaho A, Valencia J Grooming and yawning trace adjustment to unfamiliar environments in laboratory Sprague-Dawley rats *J Comparative Psychology* 2002;116(3):263-269
 606. -Moyaho A et al. Genetic and littermate influences on yawning in two selectively bred strains of rats *Dev Psychobiol.* 2009;51(3):243-248
 607. -Moyaho A, Rivas-Zamudio X, Ugarte A, Eguibar JR, Valencia J. Smell facilitates auditory contagious yawning in stranger rats. *Anim Cogn.* 2015;18(1):279-29
 608. -Moyaho, A. Flores Urbina, E. Monjaraz Guzmán, O. Walusinski. Yawning: a cue and a signal. *Heliyon* 2017;3(11)
 609. -Moyaho A, Díaz-Loyo AP, Juárez-Mora OE, Beristain-Castillo E. A Laboratory Method to Measure Contagious Yawning in Rats. *J Vis Exp.* 2019;(148).
 610. -Muchnik, Finkielman, et al Yawning and temporal lobe epilepsy *Medicina (B Aires)* 2003;63(2):137-139
 611. -Mulhern MG Ocular complications of acoustic neuroma surgery *Br J Ophthalmol* 1999;83:1392-1389
 612. -Muhlrad S Le réflexe sexuel de l'élévation des bras chez la femme *Pysché (Paris)* 1952;7(66):292-296
 613. -Mulley G Associated reactions in the hemiplegic arm *Scand J Rehabil Med* 1982;14:117-20
 614. -Mutschler I, Reinbold C, Wankerl J, Seifritz E, Ball T. Structural basis of empathy and the domain general region in the anterior insular cortex. *Front Hum Neurosci.* 2013
 615. -Myrberg A Ethology of the bicolor damselfish *Eupomacentrus partitus* *Animal behaviour monographs* 1972;5:197-283
 616. -Nahab FB, Hattori N, Saad ZS, Hallett M Contagious yawning and the frontal lobe: An fMRI study *Human Brain Mapping* 2009;30:1744-1751
 617. -Nakamura-Palacios E et al. Acute or chronic effects of cannabinoids on spontaneous or pharmacologically induced yawning in rats *Pharmacology, Biochemistry and Behavior* 2002;74:205-212
 618. -Napier JR, Napier PH Yawning serves as a visual signal in primates. *The Natural History of the Primates.* British Museum, London England 1985
 619. -Naselo A, Tieppo C, Felicio L Apomorphine induced yawning in the rat : influence of fasting and time of day *Physiology & Behavior* 1995;57(5):967-971
 620. -Nasello AG et al Modulation by sudden darkness of apomorphine-induced behavioral responses *Physiology & Behavior* 2003;78:521-525
 621. -Nayak R, Bhogale GS, Patil NM. Venlafaxine and excessive yawning: is there any link? *J Neuropsychiatry Clin Neurosci.* 2011 Spring;23(2):E56-7.
 622. -Neilands P, Claessens S, Ren I, Hassall R, Bastaos A, Taylor A. Contagious yawning is not a signal of empathy: no evidence of familiarity, gender or prosociality biases in dog. *Proceedings of the Royal Society B.* 2020; 287(120)
 623. -Ndiokwelu E Bilateral dislocation of the mandible 2 cases in a nuclear family *Odontostomatol Trop.* 2005;28(112):27-3
 624. -Neumann BG, Troncone LR, Braz S, Tufik S Modifications on dopaminergic and cholinergic systems induced by the water tank technique: analysis through yawning behavior. *Arch Int Pharmacodyn Ther* 1990;308;:32-38
 625. -Newman AH, Blaylock BL, Nader MA, Bergman J, Sibley DR, Skolnick P. Medication discovery for addiction: translating the dopamine D3 receptor hypothesis. *Biochem Pharmacol.* 2012 Oct 1;84(7):882-90

626. -Noughab MT, Vaezi G, Eivari HA, Hojati V. Acute and chronic effects of opiates and dopamine on yawning, penile erection and genital grooming behaviors in male Wistar rats. *Biomedical Research* 2017;28(16):6931-6936.
627. -Nicotra A, Khalil NM, Owbridge P, Hakda M, Beitverda Y. Pathological yawning as an ictal seizure manifestation in the elderly. *BMJ case reports*. 2012
628. -Norscia I, Palagi E. Yawn Contagion and Empathy in Homo sapiens. *PLoS ONE*. 2011;6(12):e28472
629. -Norscia I, Demuru E, Palagi E. She more than he: gender bias supports the empathic nature of yawn contagion in Homo sapiens. *R. Soc. open sci.* 2016;3:150459. <http://dx.doi.org/10.1098/rsos.150459>
630. -Norscia I, Zanolli A, Gamba M, Palagi E. Auditory Contagious Yawning Is Highest Between Friends and Family Members: Support to the Emotional Bias Hypothesis. *Front Psychol.* 2020 Apr 3;11:442
631. -Norscia, I., Coco, E., Robino, C. et al. Yawn contagion in domestic pigs (*Sus scrofa*). *Sci Rep* 2021;11:1851
632. -Norscia I, Agostini L, Moroni A, Caselli M, Micheletti-Cremasco M, Vardé C, Palagi E. Yawning Is More Contagious in Pregnant Than Nulliparous Women: Naturalistic and Experimental Evidence. *Hum Nat.* 2021
633. -Norscia I, Caselli M, De Meo G, Cordoni G, Guéry JP, Demuru E. Yawn contagion in bonobos: Another group, another story. *Am J Primatol.* 2022:e23366.
634. -Norscia I, Caselli M, Scianna C, Morone S, Brescini M, Cordoni G. Is it a Match? Yawn Contagion and Smile Mimicry in Toddlers. *Hum Nat.* 2025 Mar 13.
635. -Nowak P, Labus L, Kostrzewa RM, Brus R. DSP-4 prevents dopamine receptor priming by quinpirole *Pharmacol Biochem Behav.* 2006;84(1):3-7
636. -Nowak P et al. Neonatal co-lesion by DSP-4 and 5,7-DHT produces adulthood behavioral sensitization to dopamine D(2) receptor agonists *Pharmacol Rep.* 2009;61(2):311-318
637. -Nunes GP et al. Decreased muscarinic receptor binding in rat brain after paradoxical sleep deprivation: an autoradiographic study *Brain Res.* 1994;645(1-2):247-252
638. -Ochoa-Sepulveda JJ, Ochoa-Amor JJ Ondine's curse during pregnancy *J Neurol Neurosurg Psychiatry* 2005;76:294
639. -Ogura H, Kosasa T, Kuriya Y, Yamanishi Y Central and peripheral activity of cholinesterase inhibitors as revealed by yawning and fasciculation in rats. *Eur J Pharmacol.* 2001;415(2-3):157-64
640. -Oh JY, Kim JE, Park KD, Choi Kg A case of familial inverse Marcus Gunn phenomenon *J Neurol Neurosurg Psychiatry* 2003;74:278
641. -O'Hara SJ, Reeve AV A test of the yawning contagion and emotional connectedness hypothesis in dogs, *Canis familiaris*. *Animal Behaviour* 2011;81:335-340
642. -Ohmura Y, Jutkiewicz EM, Zhang A, Domino EF. Dopamine D1/5 and D2/3 agonists differentially attenuate somatic signs of nicotine withdrawal in rats. *Pharmacol Biochem Behav.* 2011;99(4):552-556
643. -Okuyama S et al Relation between yawning behavior and central serotonergic neural system in rats *Naunyn-Schmiedeberg's Arch Pharmacol* 1987;335:667-672
644. -Oman RE, Sullivan SJ, Fleury J, Dutil E Yawning: a possible confounding variable in EMG biofeedback studies. *Biofeedback Self Regul* 1989;14(4):339-46
645. -O'Neill B, Aronson A, Pearson B, Nauss L Superior laryngeal neuralgia: carotidynia or just another pain in the neck? *Headache* 1982;22:6
646. -Opp MR, Obal F Jr, Krueger JM. Effects of alpha-MSH on sleep, behavior, and brain temperature: interactions with IL 1 *Am J Physiol.* 1988;255(6 Pt 2):R914-22.
647. -Oreskovic D; Klarica M; Vukic M The formation and circulation of cerebrospinal fluid inside the cat brain ventricles : a fact or an illusion ? *Neuroscience Letters* 2002;327:103-106
648. -Oshima T et al. Inhibitory effects of landiolol and nicardipine on thiopental-induced yawning in humans *J Anesth* 2010;24(2):168-172
649. -Ostrea EM Jr, Chavez CJ, Strauss ME A study of factors that influence the severity of neonatal narcotic withdrawal. *Addict Dis* 1975;2(1-2):187-99
650. -O'Sullivan JD, Lees AJ, Hughes AJ Yawning in Parkinson's disease *Neurology* 1999;52(2):428
651. -Oswiecimska J, Brus R, Szkilnik R, Nowak P, Kostrzewa RM 7-OH-DPAT, unlike quinpirole, does not prime a yawning response in rats *Pharmacol Biochem Behav.* 2000;67:11-15
652. -Ouagazzal AM, Creese I. Intra-accumbens infusion of D(3) receptor agonists reduces spontaneous and dopamine-induced locomotion. *Pharmacol Biochem Behav.* 2000;67(3):637-645
653. -Pace-Schott EF, A Hobson The neurobiology of sleep: genetics, cellular physiology and subcortical networks *Nature Reviews Neuroscience* 2002;3:591-605
654. -Pae CU, JJ Kim et al Injured temporomandibular joint associated with fluoxetine-monotherapy-induced repeated yawning *Gen Hosp Psychiatry* 2003;25(3):217-8
655. -Pal S, Padala PR. A case of excessive yawning with citalopram *J Clin Psychiatry* 2009;11(3):126
656. -Palagi E, Leone A, Mancini G, Ferrari PF. Contagious yawning in gelada baboons as a possible expression of empathy. *Proc Natl Acad Sci USA.* 2009;106(46):19262-19267
657. -Palagi E, Norscia I, Demuru E. Yawn contagion in humans and bonobos: emotional affinity matters

- more than species Peer J 2:e519
658. -Palagi E, Norscia I, Cordoni G. Lowland gorillas (*Gorilla gorilla gorilla*) failed to respond to others' yawn: Experimental and naturalistic evidence. *J Comp Psychol.* 2019
 659. -Palagi E, Guillén-Salazar F, Llamazares-Martín C. Spontaneous Yawning and its Potential Functions in South American Sea Lions (*Otaria flavescens*). *Sci Rep.* 2019;9(1):17226
 660. -Palagi E, Cordoni G. Intraspecific Motor and Emotional Alignment in Dogs and Wolves: The Basic Building Blocks of Dog–Human Affective Connectedness. *Animals* 2020;10(2):241
 661. -Palagi E, Celeghein A, Tamietto M, Winkielman P, Norscia I. The neuroethology of spontaneous mimicry and emotional contagion in human and non-human animals. *Neurosci Biobehav Rev.* 2020;111:149-165.
 662. -Panksepp J Effects of ACTH(1-24) and ACTH/MSH(4-10) on isolation-induced distress vocalization in domestic chicks *Peptides* 1990;11(5):915-919
 663. -Paredes RG, Karam P, Highland L, Agmo A GABAergic drugs and socio-sexual behavior *Pharmacol BiochemBehav* 1997;58(2):291-29
 664. -Park JJ, Luedeke I, Luecke K. et al. Eustachian tube function in patients with inner ear disorders. *Eur Arch Otorhinolaryngol.* 2012
 665. -Patatanian E, Williams NT. Drug-induced yawning: a review. *Ann Pharmacother.* 2011;45(10):1297-301.
 666. Patel A, Garg I. Exploring Parakinesia Brachialis Oscitans: Insights into Post-Stroke Phenomena. *Neurology* 2025;104 (7 Supplement 1)
 667. -Patra P, Gunness TK, Robert R Physiologic variations of the internal jugular vein surface, role of the omohyoid muscle, a preliminary echographic study *Surg Radiol Anat* 1988;10(2):107-112
 668. -Paukner A, Anderson JR Video-induced yawning in stump-tail macaques (*Macaca arctoides*) *Biol Lett* 2006;2:36-38
 669. -Pedruzzi, L., Aychet, J., Le Vern, L. et al. Familiarity modulates both intra- and interspecific yawn contagion in red-capped mangabeys. *Sci Rep* 2022;12:11138
 670. -Pedruzzi L, Francescono M, Palagi E, Lemasson. The sound of yawns makes gelada yawn. *Sci Rep.* 2024;14(1):361.
 671. -Pedruzzi L, Maglieri V, Oliveri P, Francesconi M, Riccobono R, Bigozzi F, Lemasson A, Palagi E. Inertia and Rapid Divergence in the Evolution of Yawning: A Comparison Between Two Closely Related but Socially Different Monkeys. *Am J Primatol.* 2025;87(6):e70049.
 672. -Pellatt A, Wright PG, Levine LS Yawning and the Thyroid Gland. *South African Journal of Science.* 1981;77:391-394
 673. -Penfield W, Jasper H Diencephalic autonomic seizures *Epilepsy and the functional anatomy of the human brain* Little Brown et copany - Boston 1954
 674. -Peroutka SJ Dopamine and migraine *Neurology* 1997;49(3):650-656 Petramfar P, Jankovic J. Yawning-related tremor in patients with Parkinson's disease. *Parkinsonism Relat Disord.* 2025;143:108162.
 675. -Petrikovsky B, Kaplan G, Holsten N Fetal yawning activity in normal and high-risk fetuses: a preliminary observation. *Ultrasound Obstet Gynecol* 1999;13(2):127-30
 676. -Petrikovsky B, Kaplan GP, Pestrak H The application of color doppler technology to the study of fetal swallowing *Obstet Gynecol* 1995;86:605-608
 677. -Philibert C, Sauveplane K, Pinzani-Harter V et al. Le bâillement: de la physiologie à la iatrogénie. *La lettre du pneumologue.* 2011;14(5):168-172
 678. -Phillips-Bute BG, Lane JD. Caffeine withdrawal symptoms following brief caffeine deprivation. *Physiol Behav* 1997;63(1):35-39
 679. -Phoenix CH Threshold for behavioral response to testosterone in old castrated Male Rhesus Macaques *Biology of reproduction* 1986;35:918-926
 680. -Piontelli A. Development of Normal Fetal Movements. *The First 25 Weeks of Gestation.* Springer Ed. 2010. 133p.
 681. -Platek SM, Critton SR, Myers TE, Gallup GG. Contagious yawning: the role of self-awareness and mental state attribution *Cogn Brain Res* 2003;17(2):223-227
 682. -Platek S, Mohamed F, Gallup G Contagious yawning and the brain *Cognitive Brain Research,* 2005;23:448-452
 683. -Pluchon C, Jaafari N et al. A child with mutism after bilateral thalamic infarction. *J Clin Neurosci.* 2011;18(12):1738-1740.
 684. -Poggioli R, Valerija Vergoni A, et al. Influence of clonidine on the ACTH-induced behavioral syndrome, *European J. Pharmacol.* 1984;101:299-301
 685. -Poggioli R et al Nitric oxide is involved in the ACTH-induced behavioral syndrome *Peptides* 1995;16(7):1263-1268
 686. -Poggioli R, Benelli A, Arletti R, et al. Old rats are unresponsive to the behavioral effects of adrenocorticotropin. *Euro J Pharmacol* 1994;271:253-257
 687. -Pomerantz SM Apomorphine facilitates male sexual behavior of Rhesus Monkeys *Pharmacology*

- Biochemistry & Behavior 1990;35:659-664
688. -Poole KL, Henderson HA. Social Cognitive Correlates of Contagious Yawning and Smiling. *Hum Nat.* 2023 Nov 15. doi: 10.1007/s12110-023-09463-1
 689. -Portillo W, Camacho F, Eguibar JR, Paredes RG Behavioral characterization of non-copulating male rats with high spontaneous yawning frequency rate. Portillo W, Camacho F, Eguibar JR. *Behav Brain Res.* 2010;214(2):225-230
 690. -Poster et al Pathological Yawning as a symptom of SEP J of neurology 1999;243(3):300-301
 691. -Prasad H Amelioration of pathological yawning after tracheostomy in a patient with locked-in syndrome *Europ J Neurol* 2008;15:e114
 692. -Prescrire La Revue Apomorphine, Apokinon 1992;12(123):526-528
 693. -Preter M, Klein DF Panic, suffocation false alarms, separation anxiety and endogenous opioids *Prog Neuropsychopharmacol Biol Psychiatry.* 2008;32(3):603-612
 694. -Price HL, Deutsch S et al. Hemodynamic and metabolic effects of hemorrhage in man, with particular reference to the splanchnic circulation. 1966;18(5):469-474
 695. -Protais P, Dubuc I, Costentin J Pharmacological characteristics of dopamine agonists on yawning behavior in rats. *Eur J pharmacological* 1983;94:271-280
 696. -Protais P, Dubuc I, Colboc O, Costentin J Étude des récepteurs dopaminergiques dont la stimulation induit ou inhibe les bâillements chez le rat. *J Pharmacologie* 1982;sup1:191
 697. -Protais P, Windsor M, Mocoer E, Comoye E Post-synaptic 5-HT1A receptor involvement in yawning and penile erections induced by apomorphine, physostigmine and MCPP, in rats *Psychopharmacology* 1995;120(4):376-383
 698. -Provine RR, Tate BC Yawning: no effect of 3-5% CO₂, 100% O₂, and exercise *Behav Neural Biol* 1987;48(3):382-93
 699. -Provine RR Contagious Yawning and infant imitation. *Bulletin Psychonomic Soc* 1989;27:125-126
 700. -Provine RR, Hamernik HB Yawning: effect of stimulus interest. *bulletin Psychonomic Soc* 1986;24:437-438
 701. -Provine RR Faces as releasers of contagious yawning: on approach to face detection using normal human subjects. *Bulletin Psychonomic Soc* 1989;27:211-214
 702. -Provine RR Yawning as a stereotyped action pattern and releasing stimulus *Ethology.* 1986;72:109-122
 703. -Provine RR, Hamernik HB, Curchack BB Yawning : relation to sleeping and stretching in humans. *Ethology* 1987;76:152-160
 704. -Provine RR Yawns, laughs, smiles, tickles, and talking: Naturalistic and laboratory studies of facial action and social communication. *The psychology of facial expression.* 1997. In Russell and Fernandez-Dols (Eds.) Cambridge Univ. Press: Cambridge.
 705. -Provine RR Yawning and simulation science *Simulation* 1989; 193-194
 706. -Provine RR Yawning *American Scientist* 2005;93(6)532-539
 707. -Provine RR. Contagious behavior: An alternative approach to mirror-like phenomena. *Behav Brain Sci.* 2014;37(2):216-217
 708. -Provine RR. Philosopher's disease and its antidote: Perspectives from prenatal behavior and contagious yawning and laughing. *Behav Brain Sci.* 2017;40:e403
 709. -Qian XB et al Cocaine-induced brainstem seizures and behavior *Integr Physiol Behav Sci* 1992;27(2):117-129
 710. -Quintela E, Castillo J, Munoz P, Pascual J. Premonitory and resolution symptoms in migraine: a prospective study in 100 unselected patients. *Cephalalgia.* 2006;26(9):1051-1060.
 711. -Raafat RM, Chater N et al. Herding in humans *TICS* 2009;13(10):420-428
 712. -Ram H, Shadab M, Vardaan A, Aga P. Fracture of mandible during yawning in a patient with osteogenesis imperfecta. *BMJ Case Rep.* 2014 Aug 7
 713. -Ramirez V, Ryan CP, Eldakar OT, Gallup AC. Manipulating neck temperature alters contagious yawning in humans. *Physiol Behav.* 2019;207:86-89
 714. -Rancurel G, R Manai Traitement par crâniectomie des infarctus cérébraux sylviens étendus. *Sang Thrombose Vaisseaux.* 2000;12(1):12-8
 715. -Rasa OA The causal factors and function of yawning in microspathodon *Chrysurus* (Pices : Pomacentridae) *Behaviour* 1971;39:39-57
 716. -Reddy RB, Krupenye C, MacLean EL, Hare B. No evidence for contagious yawning in lemurs. *animal Cognition.* 2016.
 717. -Redican WK Facial expressions in nonhuman primates *Primate Behavior: Developments in Field and Laboratory Research,* 1975;4:103-194 (Roseblum, L. A., Ed.) Academic Press, New York.
 718. -Redican WK An evolutionary perspective on human facial displays. P. Ekman (Ed.) *Emotion in the human face* (2nd ed.). Cambridge Univ. Press: Cambridge. 1982
 719. -Reilly K, Tsou E Bilateral chylothorax , a case report following episodes of stretching *JAMA* 1975;223(6):536-537
 720. -Reissland N, Francis B, Mason J. Development of Fetal Yawn Compared with Non-Yawn Mouth

- Openings from 24-36 Weeks Gestation. *Plos One*. 2012;7(11):e50569
721. -Rigon A, Reis M, Takahashi R. Effects of Carbaryl on some Dopaminergic Behaviors in Rats. *Gen. Pharmac.* 1994;25(6):1263-1267
 722. -Riley DE. Paroxysmal kinesigenic dystonia associated with a medullary lesion. *Mov Disord* 1996;11(6):738-40 & *Mov Disord*. 1997;12(5):819
 723. -Ritter EK. Mouth gaping behavior in Caribbean reef sharks, *Carcharhinus perezi*. *Marine and Freshwater Behaviour and Physiology*. 2008;41(3):161-167
 724. -Rizzolatti G, V Gallese Resonance behaviors and mirror neurons *Archives Italiennes de biologie* 1999;137:85-100
 725. -Robe LB, Gromisch DS, Iosub S Symptoms of neonatal ethanol withdrawal. *Curr Alcohol* 1981;8:485-93
 726. -Robertson MM, Stern JS Gilles de la Tourette syndrome: symptomatic treatment based on evidence. *Eur Child Adolesc Psychiatry* 2000;9 (Suppl 1):160-75
 727. -Robins C et al Some aspects of the behavior of the blennioid fish *Chaenopsis ocellata* Poey *Proceedings of the zoogical society of London* 1959;44:77-84
 728. -Rodriguez-Sierra J Testosterone potentiation of the effectiveness of ACTH on the induction of the stretch-yawning syndrome in male Guinea Pigs *Hormones and Behavior* 1981;15:77-85
 729. -Rollinson RD, Gilligan BS Postanoxic action myoclonus (Lance-Adams syndrome) responding to valproate *Arch Neurol* 1979;36(1):44-45
 730. -Rollinson RD et al Drug-induced yawning successfully treated with pimozide *Arch Neurol* 1979;36:253
 731. -Romero T, Konno A, Hasegawa T. Familiarity Bias and Physiological Responses in Contagious Yawning by Dogs Support Link to Empathy. *PLoS ONE* 2013;8(8):e71365
 732. -Romero T, Ito M, Saito A, Hasegawa T. Social modulation of contagious yawning in wolves. *PLoS One*. 2014;9(8):e105963.
 733. -Roncero C, Mezzatesta-Gava M, Grau-López L, Daigre C. Yawning as a dose-dependent side effect of treatment with escitalopram. *Neurologia (spanish)* 2012
 734. -Rossman ZT , Hart BL, Brian J, Greco BJ, Young D, Padfield C, Weidner L, Gates J, Hart L. Yawning Occurs in Elephants. *Front. Vet. Sci.*, 28 February 2017
 735. -Rossman ZT, Padfield C, Young D, Hart BL, Hart LA. Contagious Yawning in African Elephants (*Loxodonta africana*): Responses to Other Elephants and Familiar Humans. *Front. Vet. Sci.*, 08 May 2020
 736. Rothenberg J. The Significance of Repetitive Yawning in the Emergency Patient. A Warning of Imminent Death or Permanent Disability. *American J of Emergency Medicine* 2020
 737. -Rundle BK, Caughn VR, Stanford MS. Contagious Yawning and Psychopathy. *Personality and individual Differences* 2015;86:333-37.
 738. -Rüthrich HL, Grecksch G, Matthies H Influence of modified casomorphins on yawning behavior of rats. *Peptides* 1992;13(1):69-72.
 739. -Sachs B, Akasofu K, et al. Effects of Copulation on Apomorphine-Induced Erection in Rats. *Pharmacol Biochem Behav.* 1994;48(2):423-428
 740. -Saghafi MM, Pregelj P, Zivin M. Donepezil Inhibits Diisopropylfluorophosphate-Induced Seizures and Up-regulation of Synaptotagmin 4 mRNA. *Folia Biol (Praha)*. 2010;56(60):256-262
 741. -Sagiuchi T, Tachibana S et al. Lhermitte sign during yawning associated with congenital partial aplasia of the posterior arch of the atlas *Am J Neuroradiol* 2006;27:258-260
 742. -Sakai K, Takahashi Y Driving and subsidiary behavior of taxi drivers working alternate-day shifts *Hum Ergol (Tokyo)* 1975;4(2):115-27
 743. -Salamone JD, Lallies MD, Channell SL, Iversen SD. Behavioural and pharmacological characterization of the mouth movements induced by muscarinic agonists in the rat. *Psychopharmacology (Berl)*. 1986;88(4):467-71.
 744. -Salavisa M, Mohamed B, Allen-Philbey K, Stennett AM, Champion T, Schmierer K. Parakinesia Brachialis Oscitans in a Patient With a First Manifestation of Multiple Sclerosis. *Neurol Clin Pract*. 2023 Dec;13(6):e200204
 745. -Salmon A Le bâillement physiologique et pathologique *Press Med* 1948;56:739-740
 746. -Sandyk R Excessive yawning and progressive supranuclear palsy *Int J Neurosci* 1987;34(1-2):123-124
 747. -Sandyk R The biological significance of yawning elicited by application of electromagnetic fields in multiple sclerosis. *International J of neurosciences* 1997;89(1):53-60
 748. -Sandyk R Yawning and stretching induced by transcranial application of AC pulsed electromagnetic fields in Parkinson's disease. *Int J Neurosciences* 1999;97(1-2):139-145
 749. -Sandyk R Cholinergic mechanisms in Gilles de la Tourette's syndrome *Int J Neurosci* 1995;81(1-2):95-100
 750. -Sandyk R Effects of picotesla flux electromagnetic fields on dopaminergic transmission in Tourette's syndrome. *Int J Neurosci* 1996; 84(1-4):187-94
 751. -Sanna F, Succu S, Melis MR, Argiolas A. Dopamine agonist-induced penile erection and yawning:

- Differential role of D(2)-like receptor subtypes and correlation with nitric oxide production in the paraventricular nucleus of the hypothalamus of male rats. *Behav Brain Res.* 2012;230:355-364
752. -Sanna F, Argiolas A, Melis MR. Oxytocin-induced yawning: Sites of action in the brain and interaction with mesolimbic/mesocortical and incertohypothalamic dopaminergic neurons in male rats. *Horm Behav.* 2012;62(4):505-514
753. -Sanna F, Melis MR, Angioni L, Argiolas A. Clavulanic acid induces penile erection and yawning in male rats: Comparison with apomorphine. *Pharmacol Biochem Behav.* 2013;103(4):750-755
754. -Sarnecki J Content and Contagion in Yawning *Philosophical Psychol* 2008;21(6):721-737
755. -Saroja AO, Naik KR. Persistent Pathological Yawning due to Neuromyelitis Optica Spectrum Disorder. *Ann Indian Acad Neurol.* 2026 Jan 8.
756. -Sato F et al. Suppressive effects of chronic hyperprolactinemia on penile erection and yawning following administration of apomorphine to pituitary-transplanted rats *Journal of Anthology* 1997;18(1):21-25
757. -Sato M, Kanenishi K, Hanaoka U, Noguchi J, Marumo G, Hata T. 4D ultrasound study of fetal facial expressions at 20-24weeks of gestation. *International Journal of Gynecology and Obstetrics* 2014;126:275–279
758. -Sato-Suzuki I, Kita I, Oguri M, Arita H Stereotyped yawning responses induced by electrical and chemical stimulation of paraventricular nucleus of the rat *Journal of Neurophysiology*, 1998;80(5)2765-2775
759. -Sato-Suzuki I, I Kita, Seki Y, M Oguri, H Arita Cortical arousal induced by microinjection of orexins into the paraventricular nucleus of the rat *Behavioural Brain Research* 2002;128:169-177
760. -Sauer F, Sauer E Yawning and other maintenance activities in the South African Ostrich *The Auk* October 1967;84:571-587
761. -Saura H, Beppu T, Matsuura H, Asahi S, Uesugi N, Sasaki M, Ogasawara K. Intractable yawning associated with mature teratoma of the supramedial cerebellum. *J Neurosurg.* 2014;121(2):387-9.
762. -Scheel-Krüger J The syndrome of sedation and yawning behaviour in the rat is dependent on postsynaptic dopamine d-2 receptors *J Psychopharmacol* 1986;89(4):S32
763. -Shilkret H Psychogenic sneezing and yawning. *Psychosom Medicine* 1949;11(2):127-128
764. -Schiller F Yawning ? *Journal of the History of the Neurosciences* 2002;11(4): 392-401
765. -Schino G, Aureli F Do men yawn more then women ? *Ethol. sociobiol.* 1989;10:375-378
766. -Schoonman GG, Evers DJ, Terwindt GM, van Dijk JG, Ferrari MD. The prevalence of premonitory symptoms in migraine: a questionnaire study in 461 patients. *Cephalalgia.* 2006;26(10):1209-1213
767. -Schniter E The evolution of yawning : why do we yawn and why is it contagious ? *thèse* 2001
768. -Schroth G, Klose U Cerebrospinal fluid flow; Physiology of respiration-related pulsations. *Neuroradiology* 1992;35(1):10-5
769. -Schurmann M, Hari R et al Yearning to yawn: the neural basis of contagious yawning *NeuroImage* 2005;24:1260-1264
770. -Sejnowski TJ and Destexhe A Why do we sleep ? *Brain Research* 2000;886(1):208-223
771. -Seki Y, Y Nakatani, et al Light induces cortical activation and yawning in rat *Behav Brain Res* 2003;140(1-2):65-73
772. -Seki Y, Sato-Suzuki I, et al Yawning/cortical activation induced by microinjection of histamine into the paraventricular nucleus of the rat. *Behav Brain Res.* 2002;134(1-2):75-82.
773. -Selbach C., Selbach H. Das Rekel-Syndrom als Wirkungsfolge eines biologischen Regelsystems. *Monatschr.f. Psychiat .u. Neurol* 1953;125:671-682.
774. -Senju A, Maeda M, Kikuchi Y, Hasegawa T, Tojo Y, Osanai H Absence of contagious yawning in children with autism spectrum disorder. *Biology Letters* 2007;3:706-708
775. -Senju A, Kikuchi Y, Akechi H et al. Does eye contact induce contagious yawning in children with autism spectrum disorder? *Journal of Autism and Developmental Disorders* 2009;39(11):1598-1602
776. -Sepulveda W, Mangiamarchi M Fetal yawning. *Ultrasound Obstet Gynecol* 1995;5(1):57-59
777. -Serafine KM, Bentley TA, Kilborn DJ, Koek W, France CP. Drinking sucrose or saccharin enhances sensitivity of rats to quinpirole-induced yawning. *European Journal of Pharmacology* 2015;764:529-536.
778. -Serafine KM, Rice K, France CP. Directly observable behavioral effects of lorcaserin in rats. *J Pharmacol Exp Ther.* 2015
779. -Serra G, Collu M, Serra A, Gessa GL Estrogens antagonize apomorphine-induced yawning in rats *Europ J Pharmacol* 1984;104:383-386
780. -Serra G, Collu M, Gessa GL Dopamine receptors mediating yawning are they autoreceptors *Europ J Pharmacology* 1986;120:187-192
781. -Serra G et al Hypophysectomy prevents ACTH-induced yawning and penile erection in rats *Pharmacology Biochemistry & Behavior* 1987;26:277-279
782. -Serra G , Collu M and Gessa GL Yawning is elicited by D2 dopamine agonists but is blocked by D1 antagonist *Psychopharmacology* 1987;91:330-337
783. -Serra G, Gessa GL Hypophysectomy prevents yawning and penile erection but not hypomotility

- induced by apomorphine *Pharmacology Biochemistry & Behavior* 1983;19:917-919
784. -Serra G et al Cycloheximide prevents apomorphine induced yawning, penile erection and genital grooming in rats *European Journal of Pharmacology* 1983;86:279-282
 785. -Sevak RJ, Koek W, Galli A, France CP Insulin replacement restores the behavioral effects of quinpirole and raclopride in streptozotocin-treated rats. *J Pharmacol Exp Ther.* 2007;320(3):1216-1223
 786. -Sevak RJ, Koek W, Owens WA et al. Feeding conditions differentially affect the neurochemical and behavioral effects of dopaminergic drugs in male rats. *Eur J Pharmacol.* 2008;592(1-3):109-115
 787. -Shader R, D Greenblatt Yawning and anxiety modulation *J of Clin Psychopharmacol* 1985;5:1
 788. -Shader R, D Greenblatt Yawning, a postscript and preliminary thoughts about sighing *J of Clin Psychopharmacol* 1987;7:3
 789. -Shalini A, Sreedharan S. A Complex, Contagious, Evolutionary Habit. *Ann Acad Med Singapore.* 2006;35(6):433-4.
 790. -Sharifzadeh M, Firooz EK, Abdollahi M Effects of different periods of lithium pretreatment and aminoglycoside antibiotics on apomorphine-induced yawning in rats *Pharmacol Toxicol* 2000;87(2):84-8
 791. -Sharifzadeh M et al. Alterations of physostigmine-induced yawning by chronic lithium administration in rats *Pharmacol Toxicol* 1997;81(4):159-163
 792. -Sharpe LG, Swanson LW Drinking induced by injections of angiotensin into forebrain and mid-brain sites of the monkey. 1974;239:595-622
 793. -Scherer DM, Smith SA, Abramowicz JS Fetal yawning in utero at 20 weeks gestation. *J Ultrasound Med* 1991;10(2):68
 794. -Shin-Ei Y A case of parkinsonism with yawning seizure *The Sapporo Medical J* 1954;6(5):312-325
 795. -Shoup-Knox ML, Gallup ac and al. Yawning and stretching predict brain temperature changes in rats: support for the thermoregulatory hypothesis. *Evolutionary neuroscience.* 2010;2(9):article 108:5p
 796. -Sicard JA et Paraf A Bâillements au cours de l'encéphalite épidémique *Bulletins et mémoires de la Société médicale des hôpitaux de Paris.*1921;45:232
 797. -Siegal S, Twiest M, Friedell A, Bhangoo K Why the yawn *New England Journal of medicine* 1974:1028 / 1974:1439
 798. -Silva K, Bessa J, de Sousa L. Auditory contagious yawning in domestic dogs (*Canis familiaris*): first evidence for social modulation. *Animal Cognition* 2012;15(4):721-724
 799. -Silva K, Bessa J, de Sousa L. Familiarity-connected or stress-biased contagious yawning in domestic dogs (*canis familiaris*)? some additional data . *Anim Cogn.* 2013;16(6):1007-1009
 800. -Simon P, B Guardiola et al. 5-HT1A receptor agonists prevent in rats the yawning and penile erections induced by direct dopamine agonists *Psychopharmacology (Berl)* 1992;108(1-2):47-50
 801. -Simonds AK Why do people yawn ? *Student BMJ* 1998;6:191
 802. -Singer OC, Humpich MC, et al. Yawning in acute anterior circulation stroke. *J Neurol Neurosurg Psychiatry.* 2007;78(11):1253-1254.
 803. -Skorzewska A, Tesfaye Y , Krishnan B, Schwartz G, Thavundayil J, Lal S Effect of scopolamine on spontaneous yawning in men. *Neuropsychobiology* 1993;27(1)17-20
 804. -Smith E.O. Yawning: An Evolutionary Perspective *Human evolution* 1999;14(3)191-198
 805. -Smith HP, Nichols DE, et al. Locomotor inhibition, yawning and vacuous chewing induced by a novel dopamine D2 post-synaptic receptor agonist *EurJ Pharmacology* 1997;323:27-36
 806. -Sommet A, Desplas M, Lapeyre-Mestre M, Montastruc JL. Drug-induced yawning: A review of the french pharmacovigilance database *Drug Saf.* 2007;30(4):327-331
 807. -Spahlinger S, Niessen A, Rauer S, Krämer S, Reinhard M. The Big Yawning: Pathological Yawning as a Symptom of Neuromyelitis Optica Spectrum Disorders. *Case Reports in Neurological Medicine* 2019
 808. -Specchio N, Carotenuto A et al. Ictal yawning in a patient with drug-resistant focal epilepsy: Video/EEG documentation and review of literature reports. *Epilepsy Behav.* 2011;22(3):602-605.
 809. -Spina, R Longoni, A Mulas, G di Chiara SKF 38393 potentiates yawning induced by LY 171555: further evidence against the autoreceptor hypothesis of yawning *Psychopharmacology* 1989;98:567-568
 810. -Stahle L, Ungerstedt U Discrepancy in the time course of EMD 23448 induced yawning and reduction of extracellular dopamine *Psychopharmacology* 1989;97:275-276
 811. -Stahle L Do autoreceptors mediate dopamine agonist-induced yawning and suppression of exploration ? a critical review. *Psychopharmacology* 1992;106:1-13
 812. -Stahle L, Ungerstedt U Assessment of dopamine autoreceptor agonist properties of apomorphine, (+)3ppp and (-)3ppp by recording of yawning behaviour in rats *Europ J Pharmacol* 1984;98:307-310
 813. -Stahle L, Ungerstedt U Yawning and suppression of exploration in amphetamine-treated rats, incompatibility with the autoreceptor hypothesis *Psychopharmacology* 1989;97:553-560
 814. -Stahle L, Ungerstedt U Yawning and suppression of exploration induced by dopamine agonists: no relation to extracellular striatal levels of dopamine *Pharmacol Biochem Behav*1990;35:201-209
 815. -Stancampiano R, Melis MR, Argiolas A Penile erection and yawning induced by 5-HT1c receptor agonists in male rats: relationship with dopaminergic and oxytocinergic transmission *European J*

Pharmacology 1994;261:149-155

816. -Stern E, Silbersweig DA, Chee KY, Holmes A, Robertson MM, Trimble M, Frith CD, Frackowiak RS, Dolan RJ A functional neuroanatomy of tics in Tourette syndrome. *Arch Gen Psychiatry* 2000;57;(8):741-8
817. -Stoessl AJ Effects of ageing on the behavioural responses to dopamine agonists: decreased yawning and locomotion, but increased stereotypy *Brain Research* 1989;95:20-30
818. -Stoessl AJ, Dourish CT, Iversen SD The NK-3 tachykinin agonist senktide elicits yawning and chewing mouth movements following subcutaneous administration in the rat. Evidence for cholinergic mediation. *Psychopharmacology (Berl)*. 1988;95(4):502-506
819. -Stoessl AJ, Dourish CT, Iversen SD Apomorphine-induced yawning in rats is abolished by bilateral 6-hydroxydopamine lesions of the substantia nigra *Psychopharmacol*; 1987;93:336-342
820. -Stracke J, Bert B, Fink H, Böhner J. Assessment of Stress in Laboratory Beagle Dogs Constrained by a Pavlov Sling. *Altex*. 2011;28(4):317-325
821. -Succu S, Spano MS, Melis MR, Argiolas A. Different effects of omega-conotoxin on penile erection, yawning and paraventricular nitric oxide in male rats. *Eur J Pharmacol*. 1998;359(1):19-26
822. -Sulkava R, Kovanen J. Locked-in syndrome with rapid recovery: a manifestation of basilar artery migraine? *Headache* 1983;23:238-239
823. -Sutcliffe JG, de Lecea L. The hypocretins : setting the arousal threshold, *Nature Neuroscience* 2002; 3; 5; 339-349
824. -Szechtman H et al Sensitization and tolerance to apomorphine in men: yawning, growth hormone, nausea, and hyperthermia *Psychiatry Research* 1988, 23, 245-255
825. -Szechtman H Timing of yawns induced by a small dose of apomorphine and its alteration by naloxone *Prog Neuro-Psychopharmacol & Biol Psychiat* 1984;8:743-746
826. -Taati M, Tamaddonfard E, Erfanparast A, Ghasemi H. The effects of crocin and safranal on the yawning induced by intracerebroventricular injection of histamine in rats. *Avicenna J Phytomed* 2016;6(4):442-8.
827. -Tamaddonfard E et al Central interaction between physostigmine and histamine during yawning in rats. *Pharmacological Reports* 2008;60:896-90
828. -Tan J, Ariely D, Hare B. Bonobos respond prosocially toward members of other groups. *Scientific Reports* 2017;7:n° 14733
829. -Tang AH, Himes CS Apomorphine produced more yawning in Sprague-Dawley rats than in F344 rats: a pharmacological study *Eur J Pharmacol* 1995;284(1-2):13-18
830. -Taskapilioglu O, Akkaya C, Sarandol A, Kirli S. Pathological yawning in a patient with anxiety and chronic disease anaemia *J Psychopharmacol* 2009;23(2):211-213
831. -Taylor JR, Elsworth JD, Roth RH, Sladek JR Jr, Collier TJ, Redmond DE Jr. Grafting of fetal substantia nigra to striatum reverses behavioral deficits induced by MPTP in primates: a comparison with other types of grafts as controls. *Exp Brain Res*. 1991;85(2):335-348.
832. -Teive H, Becker N, Munhoz RP. Parakinesia Brachialis Oscitans due Brainstem Stroke. Report of two cases *Parkinson Rel Dis* 2009;15(Supp 2):S154
833. -Teive HAG, Munhoz RP, Camargo CHF, Walusinski O. Yawning in neurology: a review. *Arq Neuropsiquiatr*. 2018;176(7):473-480
834. -Tesfaye Y, Lal S Hazard of yawning *Canadian Med Assoc J* 1990;142(1):15 et 1991;145(12):1560
835. -Thacker SK, Perna MK, Ward JJ, Schaefer TL. The effects of adulthood olanzapine treatment on cognitive performance and neurotrophic factor content in male and female rats neonatally treated with quinpirole. et al. *Eur J Neurosci*. 2006;24(7):2075-2083
836. -Thompson SBN. The dawn of the yawn: is yawning a warning? linking neurological disorders. *Medical Hypotheses* 2010;75(6):630-633
837. -Thompson SBN. Born to yawn? Cortisol linked to yawning: A new hypothesis. *Medical Hypotheses* 2011;77(5):861-862
838. -Thompson SB, Zisa L. Yawning: Thompson Cortisol Hypothesis Discussed. 2011.
839. -Thompson SB. Is Yawning A Warning, Neurologically? 2011.
840. -Thompson SB, Bishop Ph. Born to Yawn? Understanding Yawning as a Warning of the Rise in Cortisol Levels: Randomized Trial. *I-jmr*. 2012;1(2):e4
841. -Thompson SB. Yawning, fatigue, and cortisol: Expanding the Thompson Cortisol Hypothesis. *Med Hypotheses*. 2014 Oct;83(4):494-6.
842. -Thompson SB. Pathways to yawning: making sense of the Thompson Cortisol Hypothesis. *Medical Research Archives* 2015(3)
843. -Thompson SB, Simonsen M. Yawning As a New Potential Diagnostic Marker for Neurological Diseases. *Journal of Neurology and Neuroscience*. 2015;6(3):22
844. -Thompson SBN, Coleman A, Williams N. Yawning and cortisol levels in multiple sclerosis: Potential new diagnostic tool. *Mult Scler Relat Disord*. 2018;23:51-55.
845. -Thompson SBN, Sava D. Elevation of Cortisol Levels by Ingesting Liquorice. *Clinical Research in Neurology* 2018;1(1):1-4.

846. -Thompson SBN. Yawning as a Potential Diagnostic Indicator for Underlying Neurological Disorders. *Archives of Neurology & Neurological Disorders* 2002;5(1)
847. -Thomson HC Associated movements in hemiplegia : their origin and physiological significance *Brain* 1903;26:515-523
848. -Thorn L, Ashmeade TE, Storey VJ, Routledge C, Reavill C. Evidence to suggest that agonist modulation of hyperlocomotion is via post-synaptic dopamine D2 or D3 receptors. *Neuropharmacology*. 1997;36(6):787-792
849. -Tizabi Y et al Nicotine blocks quinpirole-induced behavior in rats: psychiatric implications *Psychopharmacology* 1999;145:433-441
850. -Titze I Regulating glottal airflow in phonation: application of the maximum power transfer theorem to a low dimensional phonation model *J Acoust Soc Am* 2002;111(1):367-376
851. -Topper R. et al. Involuntary stretching during yawning in patients with pyramidal tract lesions: further evidence for the existence of an independent emotional motor system *European J Neurology* 2003;10(5):495-499
852. -Tran Y, Craig A, Wijesuriya N, Nguyen H. Improving classification rates for use in fatigue countermeasure devices using brain activity. *Conf Proc IEEE Eng Med Biol Soc*. 2010;2010:4460-4463
853. -Trautmann René Frédéric Le bâillement Thèse Bordeaux, 1901-02, 86 pages N°40
854. -Trica TC Bioelectric-mediated predation by Swell Sharks, *Cephaloscyllium Ventriosum*. *Copeia*. 1982;4:948-952
855. -Troisi A, Aureli F, Schino G, Rinaldi F, De Angeli N, the influence of age, sex, rank on yawning behavior in two species of macaques (*Mfascicularis*, *Mfuscata*), *Ethology*, 1990;86:303-310
856. -Troisi A. Displacement Activities as a Behavioral Measure of Stress in Nonhuman Primates and Human Subjects. *Stress* 2002;5(1):47-54
857. -Trulson ME, Brandstetter JW, Crisp T, Jacobs BL. Behavioral effects of quipazine in the cat. *Eur J Pharmacol*. 1982;78(3):295-305
858. -Tsou CH, Kao T, Fan KT, et al. Clinical assessment of propofol-induced yawning with heart rate variability: a pilot study. *J Clin Anesth*. 2008;20(1):25-29
859. -Tsurumi S, Kanazawa S, Yamaguchi MK. Infant brain activity in response to yawning using functional near-infrared spectroscopy. *Sci Rep*. 2019 Jul 23;9(1):10631
860. -Tufik S et al Effects of stress on drug induced yawning *Physiology & behavior* 1995;58(1):1881-1884
861. -Tufik S Does REM sleep deprivation induce subsensitivity of presynaptic dopamine or postsynaptic acetylcholine receptors in the rat brain? *European Journal of Pharrnacology* 1987;140:215-219
862. -Ugarte A, Eguibar JR, Cortés MD, et al. Comparative analysis of maternal care in the high-yawning (HY) and low-yawning (LY) sublines from sprague-dawley rats. *Dev Psychobiol*. 2011;53(2):105-117
863. -Ugboko VI, Oginni FO, Ajike SO, Olasoji HO, Adebayo ET. A survey of temporomandibular joint dislocation: aetiology, demographics, risk factors and management in 96 Nigerian cases. *Int J Oral Maxillofac Surg*. 2005;34(5):499-502
864. -Unnikrishnan KP, Sinha PK, Rao S. Mandibular dislocation from yawning during induction of anesthesia. *Can J Anaesth*. 2006;53(11):1164-5.
865. -Urba-Holmgren R, Trucios N, Holmgren B, Eguibar JR, Gavito A, Cruz G, Santos A Genotypic dependency of spontaneous yawning frequency in the rat *Behav Brain Res* 1990;40(1):29-35
866. -Urba-Holmgren R, Santos A, Holmgren B, Eguibar JR Two inbred rat sublines that differ in spontaneous yawning behavior also differ in their responses to cholinergic and dopaminergic drugs *Behav Brain Res* 1993;56(2):155-159
867. -Urba-Holmgren R, Holmgren B, Rodriguez R, Gonzalez RM Serotonergic modulation of yawning *Pharmacol Biochem Behav* 1979;11(3):371-372
868. -Urba-Holmgren R, Gonzalez RM, Holmgren B Is yawning a cholinergic response? *Nature* 1977; 267(5608): 261-2 et commentaires Cholinergic link in yawning A Cowan *Nature* 1978;271:187-188
869. -Urba-Holmgren R, Holmgren B, Leon BA, Ugarte A Age-dependent changes in serotonergic modulation of yawning in the rat. *Pharmacol Biochem Behav* 1992;43(2):483-486
870. -Ushijima I, Mizuki Y, Yamada M Multifocal sites of action involved in dopaminergic-cholinergic neuronal interactions in yawning *Psychopharmacology (Berl)* 1988;95:34-37
871. -Ushijima I et al, Muscarinic and nicotinic effects on yawning and tongue protruding in the rat *Pharmacol Biochem Behavior* 1984;21:297-300
872. -Ushijima et al modification of apomorphine, physostigmine and pilocarpine induced yawning after long term treatment with neuroleptic or cholinergic agents *Arch Int Pharmacodyn* 1984;271:180-188
873. -Ushijima I et al Characteristics of yawning behavior induced by apomorphine, physostigmine and pilocarpine *Arch Int Pharmacodyn* 1985;273:196-201
874. -Ushijima, I., Y. Mizuki, et al. Behavioral effects of dilazep on cholinergic, dopaminergic, and purinergic systems in the rat. *Pharmacol Biochem Behav* 1992;43(3):673-676.
875. -Ushijima I, Mizuki Y, et al Effects of age on behavioral responses to dopamine agonists in the rat. *Eur J Pharmacol*. 1987;138(1):101-106.

876. -Ushijima I, Mizuki Y, Yamada M. The mode of action of bromocriptine following pretreatment with reserpine and alpha-methyl-p-tyrosine in rats. *Psychopharmacology (Berl)*. 1988;95(1):29-33.
877. -Usui S, Senju A, Kikuchi Y, Akechi H, Tojo Y, Osanai H, Hasegawa T. Presence of Contagious Yawning in Children with Autism Spectrum Disorder. *Autism Research and Treatment*. Vol 2013 Article ID 971686
878. -Valdés-Cruz A. et al Chronic stimulation of the cat vagus nerve Effect on sleep and behavior *Progress in Neuro-Psychopharmacology & Biological Psychiatry* 2002;26:13-118
879. -Valdivieso-Cortadella S, Bernardi-Gómez C, Aureli F, Llorente M, Amici F. Yawning and scratching contagion in wild spider monkeys (*Ateles geoffroyi*). *Sci Rep*. 2023;13(1):8367
880. -van Berlo E, Díaz-Loyo AP, Juárez-Mora OE, Kret ME, Massen JJM. Experimental evidence for yawn contagion in orangutans (*Pongo pygmaeus*). *Sci Rep*. 2020;10(1):22251.
881. -van den Buuse M. Differential effects of quinolorane and pergolide on behaviour, blood pressure, and body temperature of spontaneously hypertensive rats and Wistar-Kyoto rats. *Pharmacol Biochem Behav*. 1995;50(3):389-397.
882. Van Erp AM, Kruk MR, et al. Grooming induced by intrahypothalamic injection of ACTH in the rat: comparison with grooming induced by intrahypothalamic electrical stimulation and i.c.v. injection of ACTH. *Brain Res*. 1991;538(2):203-210
883. -Van Sweden B, Vanderhoven L, van Erp MG Excessive yawning *Acta Neurol Belg* 1994;94(3):150-151
884. -Van Woerden EE et al Fetal mouth movements during behavioral states 1F and 2F *Eur J Obstet Gynecol Reprod Biol* 1988;29:97-105
885. -Veenema HC, Spruijt BM, et al Aging, dominance history, and social behavior in Java-monkeys (*Macaca fascicularis*). *Neurobiol Aging*. 1997;18(5):509-515
886. -Verdure-poussin A, Weber J Dossier troubles du sommeil, *Revue du Praticien Médecine Générale* 2001;15(550):787-1801
887. -Vibhangini S. Wasade, Indranil Balki, Susan M. Bowyer, Shaila Gaddam et al. Controllable yawning expressed as focal seizures of frontal lobe epilepsy. *Epilepsy & Behavior Case Reports* 2016;6:61-63.
888. -Viblanç Va et al. It costs to be clean and fit: energetics of comfort behavior in breeding-fasting penguins. *PLoS One* 2011;6(7):e21110
889. -Vick SH, Paukner A Variation and context of yawns in captive chimpanzees *Am J Primato* 2009;71:1-8
891. -Villablanca J, Marcus R Sleep-wakefulness, EEG and behavioral studies of chronic cats without neocortex and striatum: the "diencephalic" cat *Arch Ital Biol* 1972;110(3):348-382
892. -Voigt CC et al Storage and display of odour by male *Sacropteryx bilineata* *Behav Ecol Sociobiol* 1999;47:29-40
893. -Von Armin Heymer, et al On the ethology of the mediterranean fish (*Blennius rouxi* Cocco 1833) *Zeitschrift für Tierpsychology* 1976;41(2)121-141
894. -Walshe FMR On certain tonic or postural reflexes in hemiplegia with special reference to the so called "associated movements" *Brain*, 1923;46:1-37
895. -Walusinski O Pourquoi bâillons-nous ? *La Revue du Praticien médecine générale* 2000;14(487):259-263
896. -Walusinski O le bâillement du réflexe à la pathologie AIM actualités innovations médecine 2002;(80):34-36
897. -Walusinski O, Deputte BL Le bâillement : de l'éthologie à la médecine clinique *Revue du Praticien* 2002 52:18
898. -Walusinski O, Deputte BL Le bâillement : phylogenèse, éthologie, nosogénie *La Revue Neurologique (Paris)* 2004;160(11):1011-1021
899. -Walusinski O, Kurjak A, Andonotopo W, Azumendi G Fetal yawning assessed by 3D and 4D sonography *The Ultrasound Review of Obstetrics & Gynecology* 2005;(3):210-217
900. -Walusinski O, Quoirin E, Neau JP. La parakinésie brachiale oscitante. *Rev Neurol (Paris)*. 2005;161(2):193-200.
901. -Walusinski O. Yawning: Unsuspected avenue for a better understanding of arousal and interoception. *Med Hypotheses*. 2006;67(1):6-10
902. -Walusinski O Yawning : a behavior testifying arousal reinforcement during brainstem stroke. response jnnp 2005 pdf
903. -Walusinski O, Bogousslavsky J, Neau JP. Hand up ! yawn and raise your arm. *The International Journal of Stroke* 2010;5(1):21-27
904. -Walusinski O. Yawning in diseases *European Neurology* 2009;62(3):180-187
905. -Walusinski O. Why do we yawn ? past and current hypotheses in *Hypotheses in Clinical Medicine*. Nova Science Publishers. 2013.
906. -Walusinski O. Associated Diseases. *Front Neurol Neurosci* 2010;28:140-155
907. -Walusinski O Yawning in the history of psychiatry. *History of Psychiatry* 2021;32(4):449-461.

908. -Walusinski O. Contagiosité des comportements humains : la réplication du bâillement peut-elle nous éclairer ? *Annales Médico-psychologiques* 2021;179(9):830-834.
909. -Walusinski O. Le bâillement. *Médecine du Sommeil* 2024;21(3)
910. -Watling CN, Armstrong KA, Radunb I. Examining signs of driver sleepiness, usage of sleepiness countermeasures and the associations with sleepy driving behaviours and individual factors. *Accident Analysis and Prevention*. 2015;85:22–29
911. -Weila RS et al. Air swallowing as a tic *Journal of Psychosomatic Research* 2008;65:497-500
912. -Weinberg WA, Brumback RA Primary disorder of vigilance: a novel explanation of inattentiveness, daydreaming, boredom, restlessness, and sleepiness. *J Pediatr* 1990; 116; 5; 720-5 Comment in: *J Pediatr*. 1991;118;(3):489-90
913. -Weller MP, Yawning, *Lancet* 23/4/1988;(859):950 (très brève lettre réponse à Wimalaratana)
914. -Wernsmann B, Pape HC, Speckmann EJ, Gorji A. Effect of cortical spreading depression on synaptic transmission of rat hippocampal tissues. *Eur J Neurosci*. 2006;23(5):1103-1110
915. -Whiteley AM, Warrington EK Prosopagnosia : a clinical, psychological and anatomical study in three patients. *Journal of neurological & neurosurgical psychiatry*, 1977;67:394-430
916. -Whyte S, P Darveniza A Review of 20 Cases of Spastic Dysphonia *Clin Exp Neurol* 1989;26:177-181
917. -Wicks P Excessive yawning is common in the bulbar-onset form of ALS *Acta Psychiatr Scand* 2007:1
918. -Wielosz M Yawning induced by apomorphine, physostigmine or pilocarpine is inhibited by electroconvulsiv shock *Acta Physiologica Hungaria* 1996;84(4):473-475
919. -Wilkinson A et al. No evidence of contagious yawning in the red-footed tortoise. *Current Zoology* 2011;57(4):477-484
920. -Williams DR The yawning reflex: An upper motor neuron sign in amyotrophic lateral sclerosis *Neurology* 2000;55(10):1592-1593
921. -Wimalaratana HS, Capildeo R Is yawning a brainstem phenomenon ? *Lancet*, 6/2/1988,1(8580):300
922. -Wind J le hoquet et le bâillement *Practica Oto Rhino Laryngologica* 1970;32:1
923. -Winther B et al Radiopaque contrast dye in nasopharynx reaches the middle ear during swallowing and/or yawning *Acta Oto-Laryngologica* 2005;125:625-628
924. -Wong KY, Ngan KC, Sin VC, Lau WH Sphenoidal sinus mucocoele and yawning after radiation treatment for nasopharyngeal carcinoma. *Clin Oncol (R Coll Radiol)* 1997;9(6):415-417
925. -Wong R, Sagar S The treatment of persistent yawning with acupuncture. *Acupunct Med* 2000;18:124-126
926. -Wood PL et al Increase of hippocampal acetylcholine turnover rate and the stretching-yawning syndrome elicited by alpha-MSH and ACTH *Life Sciences*1978;22:673-378
927. -Woodbury R, B Abretj Influence of dying gasps, yawns and sighs on blood pressure and blood flow *Am J Physiol* 1944; 142:721-724
928. -Wu CC, Chen JY, Tao PL, Chen YA, Yeh GC. Serotonin reuptake inhibitors attenuate morphine withdrawal syndrome in neonatal rats passively exposed to morphine. *Eur J Pharmacol*. 2005;512(1):37-42.
929. -Wu YT, Chang ST, Chen LC, Li TY. Concurrence of Crossed Cerebellar Diaschisis and Parakinesia Brachialis Oscitans in a Patient with Hemorrhagic Stroke. *Case Rep Med*. 2013;2013:519808
930. -Xiao Fan, Yanfeng Sun, et al. Gabor-based dynamic representation for human fatigue monitoring in facial image sequences *Pattern Recognition Letters* 2010;31:234-243
931. -Xu JH, Ikeda Y, Komiyama S Bio-feedback and the yawning breath pattern in voice therapy: a clinical trial. *Auris Nasus Larynx* 1991;18(1):67-77
932. -Yamada K, Furukawa T Direct evidence for involvement of dopaminergic inhibition and cholinergic activation in yawning *Psychopharmacology* 1980;67:39-43
933. -Yamada K, Furukawa T The yawning elicited by alpha-melanocyte-stimulating hormone involves serotonergic -dopaminergic - cholinergic neuron link in rats *Naunyn-Schmiedeberg's Arch Pharmacol* 1981;316:155-160
934. -Yamada K et al Involvement of septal and striatal dopamine D2 receptors in yawning behavior in rats *Psychopharmacology* 1986;90:9-13
935. -Yamada K et al Possible involvement of differing classes of dopamine d2 receptors in yawning and stereotypy in rats *Psychopharmacology* 1990;100:141-144
936. -Yamada K, Furukawa T Behavioral studies on central dopaminergic neurons. especially jumping, stretching, body shaking and yawning behavior *J Pharmacobiodynamics* 1980; 3; S16-S18
937. -Yamada K, Matsumoto S, Nagashima M, Kumagai M, Matsuo N, Furukawa T Stimulatory effects of beta-adrenoceptor blockers on the yawning induced by dopaminergic and cholinergic agonists in rats. *Japanese J Pharmacology* 1987;43; supp53p
938. -Yamada K, S Matsumoto, M Nagashima, K Shirakawa, T Furukawa Potentiation of yawning responses to the dopamine receptor agonists B-HT 920 and SND 919 by pindolol in the rat *J Neural Transm* 1990;79:19-24

939. -Yamaguchi Y, Kobayashi H. Effects of apomorphine, physostigmine and vasoactive intestinal peptide on penile erection and yawning in diabetic rats. *Eur J Pharmacol.* 1994;254(1-2):91-96
940. -Yan F, Dai SY, Akther N, Kuno A, Yanagihara T, Hata T. Four-dimensional sonographic assessment of fetal facial expression early in the third trimester. *Int J Gynaecol Obstet.* 2006;94(2):108-113
941. -Yankovsky A, Andermann F, Dubeau F. Post-ictal forceful yawning: an autonomic symptom in a patient with nondominant hemisphere epilepsy. video-eeg presentation *Epilepsia* 2005;46:s8; 23-34
942. -Yankovsky A, Andermann F, Dubeau F. Post-ictal forceful yawning in a patient with nondominant hemisphere epilepsy *Epileptic disord.* 2006;8(1):65-69
943. -Yap AU, Tan KB, Hoe JK, Yap RH, Jaffar J On-line computerized diagnosis of pain-related disability and psychological status of TMD patients: a pilot study. *J Oral Rehabil* 2001;28(1):78-87
944. -Yıldırım YE, Yurtseven E, Aydın PÇ, Günver MG. Prevalence of SSRI-Related yawning and relationship with clinical features in patients with major depressive disorder: A prospective study.. *J Psychiatr Res.* 2025 192:378-384.
945. -Yigiter AB, Kavak ZN. Normal standards of fetal behavior assessed by four-dimensional sonography. *J Matern Fetal Neonatal Med.* 2006;19(11):707-721
946. -Yonezawa T, Sato K, Uchida M, Matsuki N, Yamazaki A. Presence of contagious yawning in sheep. *Anim Sci J.* 2016 Sep 8
947. -Yoon JMD, Tennie C Contagious yawning: a reflection of empathy, mimicry, or contagion. *Anim Behav* 2010;79:e1-e3
948. -Zafar H Integrated jaw and neck function in man. Studies of mandibular and head-neck movements during jaw opening-closing tasks. *Arch Oral Biol* 2000;45(8):675-82.
949. -Zannella A, Norscia I, Stanyon R, Palagi E. Testing Yawning Hypotheses in Wild Populations of Two Strepsirrhine Species: *Propithecus Verreauxi* and *Lemur Catta*. *Am J Primatol.* 2015;77(11):1207-1215
950. - Zannella A, Stanyon R, Palagi E. Yawning and Social Styles: Different Functions in Tolerant and Despotic Macaques (*Macaca tonkeana* and *Macaca fuscata*). *J Comp Psychol.* 2017;131(3):179-188
951. -Zannella A, Stanyon R, Maglieri V, Palagi E. Not all yawns tell the same story: The case of Tonkean macaques. *Am J Primatol.* 2021;83(7):e23263.
952. -Zarrindast MR, Poursoltan M Interactions of drugs acting on central dopamine receptors and cholinergic receptors on yawning responses in the rat induced by apomorphine, bromocriptine or physostigmine *Br J Pharmacol* 1989;96(4):843-848
953. -Zarrindast, MR, Jamshidzadeh A Inhibitory effect of morphine on yawning induced by cholinergic and dopamine D2 receptor activation in rats *Br J Pharmacol* 1992;105(3):675-678
954. -Zarrindast MR, Toloui V, Hashemi B Effects of GABAergic drugs on physostigmine-induced yawning in rats; *Psychopharmacology (Berl)* 1995;122:297-300
955. -Zarrindast MR, Fazli-Tabai S, Semnani S, Fathollahi Y Influence of different adrenoceptor agonists and antagonists on physostigmine-induced yawning in rats. *Pharmacol Biochem Behav* 1999;62(1):1-5
956. -Zarrindast MR, M Ghazi-Khansari, et al Effects of lead exposure on licking and yawning behaviour in rats *Pharmacol toxicol* 1998;83:120-124
957. -Zarrindast MR et al Effects of adenosine agents on apomorphine-induced yawning in rats *Psychopharmacology* 1995;122:292-296
958. -Zarrindast MR et al Effects of adenosine receptor agonists and antagonists on physostigmine-induced yawning *Europ J Pharmacology* 1995;276:3-7
959. -Zarrindast MR et al The effect of electroconvulsive shock seizures on behaviour induced by dopaminergic agonists and on immobility in the Porsolt test *Europ Neuro Psychopharmacol* 2004;14(6):509-514
960. -Zarrindast M, K Nojoomi et al Nitric oxide agents and apomorphine induced rat behaviors *Pharmacology* 2004;71:169-173
961. -Zebian B, Hogg FR, Fu RZ, Sivakumaran R, Stapleton S. Yawning as a presenting symptom of Chiari malformation Type I: report of 2 cases. *J Neurosurg Pediatr.* 2015;15:612-4.
962. -Zilli I, Giganti F, Salzarulo P. Yawning in morning and evening types. *Physiol Behav* 2007;91(2-3):218-222
963. -Zilli I, Giganti F, Uga V. Yawning and subjective sleepiness in the elderly. *J Sleep Res* 2008;17:3003-308
964. -Zorretto FP, Braatz VL, Walusinski O, Teive HA. Parakinesia brachialis oscitans during thrombolytic therapy. *BMJ Case Rep.* 2013
965. -Zucker EL, Gerald, MS, Kaplan, JR Frequencies and contexts of gape yawn displays of free-ranging patas monkeys (*Erythrocybus patas*.) *American Journal of Primatology* 1998;45(2):215