

Research Topics studied in the Institute of Physiology (Czech Academy of Sciences) 1954 - 2024

Critical periods of development, perinatal programming, late effects of early interventions (1954-2024) Hahn, Křeček, Koldovský, Houštěk, Kopecký

- Hahn P, Křeček J, Křečková J. The development of thermoregulation. I. The development of thermoregulatory mechanisms in young rats. *Physiol Bohemoslov* 1956;5:283-290. **26 citations**
- Nováková V, Faltin J, Flandera V, Hahn P, Koldovský O. Effect of early and late weaning on learning in adult rats. *Nature* 1962;193:280. **38 citations**
- Kraus M, Křeček J, Popp M. Development of corticosterone production by adrenal gland in normally and prematurely weaned rats. *Physiol Bohemoslov* 1967;16:120-127. **30 citations**
- Hahn P, Koldovsky O. Development of metabolic processes and their adaptation during postnatal life. In: *Physiology and Pathology of Adaptation Mechanisms*, ed. E. Bajusz, Pergamon Press, Oxford, 1969, pp. 48-74. **20 citations**
- Křeček J. The theory of critical developmental periods and post-natal development of endocrine functions. In: *The Biopsychology of Development*, eds E. Tobach et al., Academic Press, New York, 1971, pp. 233-248. **39 citations**
- *Hahn P, Kirby L. Immediate and late effects of premature weaning and of feeding a high fat or high carbohydrate diet to weanling rats. *J Nutr* 1973;103: 690-696. **92 citations**
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- *Koldovský O. Response of the gastrointestinal tract to premature weaning in experimental animals. *Pediatrics* 1985;75:199-206. **29 citations**
- Houštěk J, Vízek K, Pavelka S, Kopecký J, Krejčová E, Heřmanská E, Čermáková S. Type II iodothyronine 5'-deiodinase and uncoupling protein in brown adipose tissue of human newborns. *J Clin Endocrinol Metab* 1993;77:382-387. **73 citations**
- Pavelka S, Kopecký P, Bendlová B, Štolba P, Vítková I, Vobruba V, Plavka R, Houštěk J, Kopecký J. Tissue metabolism and plasma levels of thyroid hormones in critically ill very premature infants. *Pediatr Res* 1997;42:812-818. **48 citations**
- Kus V, Prazak T, Brauner P, Hensler M, Kuda O, Flachs P, Janovska P, Medrikova D, Rossmeisl M, Jilkova Z, Stefl B, Pastalkova E, Drahota Z, Houstek J, Kopecky J. Induction of muscle thermogenesis by high-fat diet in mice: association with obesity-resistance. *Am J Physiol Endocrinol Metab* 2008;295:E356-E367. **65 citations**

Muscle physiology (1954-1979) Gutmann, Hanzlíková, Hník, Bass, Syrový

- Hník P, Jirmanová I, Vyklický L, Zelená J. Fast and slow muscles of the chick after nerve cross-union. *J Physiol* 1967;193:309-325. **118 citations**
- Syrový I, Gutmann E. Changes in speed of contraction and ATPase activity in striated muscle during old age. *Exp Gerontol* 1970;5:31-35. **60 citations**
- Gutmann E, Hanzlíková V, Vyskočil F. Age changes in cross striated muscle of the rat. *J Physiol* 1971;216:331-343. **130 citations**
- Gutmann E, Schiaffino S, Hanzlíková V. Mechanism of compensatory hypertrophy in skeletal muscle of the rat. *Exp Neurol* 1971;31:451-464. **168 citations**
- Carlson BM, Gutmann E. Development of contractile properties of minced muscle regenerates in the rat. *Exp Neurol* 1972;36:239-249. **107 citations**
- Bass A, Gutmann E, Hanzlíková V. Biochemical and histochemical changes in energy supply enzyme pattern of muscles of the rat during old age. *Gerontologia* 1975;21:31-45. **109 citations**
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Neurotrophic effects in skeletal muscle (1954-1993) Gutmann, Žák, Vrbová, Beránek, Hník, Srový, Vejsada, Paleček

- Žák R, Gutmann E, Vrbová G. Quantitative changes of muscle proteins after stimulation of the muscle. *Experientia* 1957;13:80-81. [9 citations](#)
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Mechanoreceptors development, morphology and function (1954-2016) Zelená, Hník, Hudlická, Jirmanová, Soukup, Vejsada

- Zelena J. The morphogenetic influence of innervation on the ontogenetic development of muscle spindles. *J Embryol Exp Morphol* 1957;5:283-292. [199 citations](#)
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Spreading depression (1954-1999) Bureš, Burešová, Křivánek

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Water and electrolyte metabolism, body fluids, ion transport (1954-2021) Křeček, Jelínek, Dlouhá, Kuneš, Zicha

- Čapek K, Jelínek J. The development of the control of water metabolism. I. The excretion of urine in young rats. *Physiol Bohemoslov* 1956;5:91-96. [57 citations](#)
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Toxic effects of mercury and cadmium (1956-1976) Pařízek

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Clinical and translational epileptology (1958-2024) Servít, Mareš P, Jirůška

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Higher brain functions (1958-2000) Radil, Bohdanecký, Indra, Mates

Lánský P, Radil T. Statistical inference on spontaneous neuronal discharge patterns. I. Single neuron. *Biol Cybern* 1987;55:299-311. [33 citations](#)

Paus T, Babenko V, Radil T. Development of an ability to maintain verbally instructed central gaze fixation studied in 8- to 10-year-old children. *Int J Psychophysiol* 1990;10:53-61. [40 citations](#)

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Lipid metabolism – cholesterol transport (1959-2011) Hahn, Koldovský, Dobiášová

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Ontogeny of animal behavior (1959-1987) Lát J, Nováková V, Martínek Z

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Epilepsy and brain metabolism (1960-2024) Folbergrová, Kubová, Otáhal

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Cardiac development and sensitivity to hypoxia (1963-2024) Poupa, Ošťádal, Kolář, Ošťádalová

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Mitochondrial calcium metabolism and glycerol-3-phosphate dehydrogenase (1963-2020) Drahota, Houštěk, Mráček

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Neurocytology (1963-2012) [Lodin, Mareš V](#)

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Cell cultures (1964-2016) [Holečková, Michl, Baudyšová, Tolar, Mareš V](#)

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