

## **Yanchuk Petro Ivanovich**

Doctor of Biological Sciences

Professor

Taras Shevchenko National University of Kyiv,

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Research interests: study of the mechanisms of neuro-humoral regulation of cardiovascular, respiratory and digestive systems in norm and in pathology.

Dr. Yanchuk developed a new concept that the hypothalamus plays a leading and coordinating roles in neuro-humoral regulation of blood flow and tissue respiration in the organs of gastrointestinal tract, including the liver. Hypothalamus exerts differentiated impact on functional elements of the body and changes the blood supply and oxygen balance of the organs via nerves (quickly) or hormones (relatively slowly), in the implementation of homeostatic and behavioral reactions.

At present, Dr. Yanchuk is a teacher at the Department of Physiology and Anatomy of Educational and Scientific Center "Institute of Biology and Medicine", Taras Shevchenko National University of Kyiv

**Main subjects:**

"Physiology of blood and respiration", "Physiology of blood circulation" "Physiology of crisis states of the human body" (educational degree "Bachelor", specialty "Biology" according to the program "Biology", specialization "physiology of humans and animals"). Physiology and evolution of the nervous system" and "Physiology of central nervous system" for students of the Department of psychology and sociology of Taras Shevchenko National University of Kyiv.

**Disciplines of students' choice:** "Physiology of regional blood circulation" (educational degree "Master", specialty "Biology" according to the program "Biology", physiology of humans and animals).

**For a long period of time Professor Janchuk taught the following academic disciplines:**

" Human Anatomy", "Human and animal physiology" - for students of the Educational and Scientific Center "Institute of Biology and Medicine", "Anatomy and evolution of the nervous system" and "Physiology of the central nervous system" for students of the Department of psychology and sociology of Taras Shevchenko National University of Kyiv.

### **In detail**

#### **Academic degrees:**

1975 – qualified as biologist, physiologist of humans and animals, teacher of biology and chemistry. Graduated from the Faculty of Biology of Kyiv Taras Shevchenko State University.

1984 – the degree of candidate of biological sciences in specialty 03.00.13. - human and animal physiology (the theme of the dissertation was "Effect of stimulation of hypothalamus structures and medulla oblongata on blood circulation in the liver.

1994 – academic title of senior researcher in the specialty 03.00.13 - human and animal physiology.

2003 – the degree of doctor of biological sciences, specialty 03.00.13. - human and animal physiology (the theme of the dissertation was "Neurohormonal regulation of liver circulation and respiration".

2014 – academic title of professor, specialty 03.00.13. - Human and animal physiology.

#### **Education:**

1964 - 1968 – the training medical school in Makarov (Kiev region), graduated "with honor".

1969 - 1975 – study at the biological faculty of the Kiev Taras Shevchenko State University.

1980 - 1983 – graduate school at the Department of Human and Animal Physiology on Biological Faculty of Kiev Taras Shevchenko State University.

**Professional career:**

- 1968 - 1972– after training (6 months) at the Institute of Cardiovascular Surgery, Medical Academy of Sciences, Ukraine (now Institute of Amosov) and the Institute of Hematology, Ministry of Health of Ukraine worked as a medical assistant in specialized resuscitation teams in central ambulance station in Kyiv.
- 1972 - 1974 – engineer of Research Laboratory Taras Shevchenko State University.
- 1974 - 1980 – Senior Engineer, performed research and development, Department of Biomedical Problems of the Kiev branch of the All-Union Research Institute of Chemical Industry.
- 1983 –1990 – Researcher of Research Institute of Physiology, Kiev, Taras Shevchenko State University.
- 1990 – 1994 - Senior Researcher, Institute of Physiology, Taras Shevchenko National University of Kyiv.
- 1994 – 2006 – chief of nonstructural laboratory of blood circulation physiology, Institute of Physiology, Taras Shevchenko National University of Kyiv
- 2006 – 2010 – chief of Research laboratory of physiology, Taras Shevchenko National University of Kyiv.
- 2011 – 2015 - director of the Department in Research Institute of Physiology, Educational and Scientific Center "Institute of Biology and Medicine", Taras Shevchenko National University of Kyiv.
- 2016 – 28.02.2018 - the supervisor of the research topic 16ДП036-05 (leading researcher).
- 2018 until now - Senior Researcher at the Institute of High Technologies of Kyiv National Taras Shevchenko University.
- 1983 – 2002 - teacher (voluntary) at Department of Human and Animal Physiology biological faculty of Kyiv National Taras Shevchenko University.
- 2003 - 2006 – Associate Professor, Department of Human and Animal Physiology, biological faculty of Kyiv National Taras Shevchenko University.
- 2006 – until now, professor (part-time) in Department of Physiology and Anatomy, Educational and Scientific Center "Institute of Biology and Medicine", Taras Shevchenko National University of Kyiv.

**Grants, awards, membership in specialized scientific councils, scientific societies:**

- 1995 received a grant-invitation to participate in the International symposium “Digestive tract innervation” in Japan (Matsuyama) with a report on the role of different levels of the central nervous system in the regulation of blood flow and hepatic tissue respiration.
- 1997 and 1999. Received a grant-invitation to Falk-Symposium to Germany (Freiburg) and Switzerland (Basel) dedicated to liver diseases. Reported on the mechanisms of portal hypertension.

Dr. Yanchuk P.I. is a member of the specialized scientific council D 26.198.01 at the Alexander Bogomolets Institute of Physiology Ukrainian National Academy of Sciences, for the defense of doctoral and candidate's dissertations; he has been also a member of the specialized academic council D 26.001.38 at the Taras Shevchenko National University of Kyiv for 15 years. An official reviewer of dissertations.

Under his leadership, 8 PhD dissertations and about 100 master diploma works were successfully defended. At present, he is the supervisor of 3 PhD students. Prof. Yanchuk P.I. was repeatedly elected co-chair of international and national congresses and conferences. He is a member of the Ukrainian Physiological Society and is a member of the editorial board of Ukrainian "Physiological Journal".

**Publications:** scientific monographs - 2; textbooks - 2; certificates and patents - 5; articles in scientific journals - 135, along with thesis presentations at national and international symposia and conferences (more than 300).

### **Major Publications:**

#### **Monographs:**

1. Yanchuk P. I. Neurohormonal regulation of blood flow and tissue respiration of the liver.

Kyiv: "Age print". 2014; 304 p.

2. Yanchuk P.I. Modeling of portal hypertension and the search for approaches to its correction. Actual aspects of internal medicine. Novosibirsk: SibAK. 2013; P. 26-46.

#### **textbook:**

Melnichuk DO, Tomchuk VA, Yanchuk PI et al. Methods of investigation of the liver and hepatobiliary system functional state. Kiev: "NUBIS of Ukraine". 2015; 415 p.

#### **Articles:**

1. Yanchuk PI, Tsybenko VO. Changes in hepatic circulation during stimulation of the medulla oblongata. *Fisiol Zh.* 1986; 32(4): 449-455.

2. Yanchuk PI, Dubiley TA, Tsybenko VO. Influence of catecholamines on blood circulation in the liver // *Biol. Scien.* 1990; (10): 97-104.

3. Tsybenko VA, Yanchuk PI. Central nervous control of hepatic circulation. *Jorn. Autonomic Nerv. Syst.* 1991; 33: 255-266.

4. Yanchuk PI, Tsybenko VO. The method of intravital determination of blood composition in the organs of animals. *The patent of Ukraine UA No4062.* 1994.

5. Tsybenko VO, Yanchuk PI. Central and peripheral activation of liver sympathetic innervation: effects on hepatic blood flow and respiration. In.: Liver innervation and neural control of hepatic function. T. Shimazu. (Edit). London. 1996; P. 265-273.

6. Yanchuk PI, Tsybenko VO. Neurohumoral mechanisms of hypothalamic regulation of blood circulation and tissue respiration in the liver. *Arch. Clin. Experim. Med.* 2000; 9(1): 135-137.

7. Knyshov GV, Nastenka EA, Maksimenko VB, Yanchuk PI, Kravchuk AA, Bilyk LN. Integral principles of oxygen delivery and consumption regulation in the human body. *Sechenov Russian Physiol. J.* 2006; 92(12): 1412-1418.
8. Yanchuk PI, Rusynchuk Y, Terekhov A. Effect of endothelin-1 on the liver oxygen balance and physiological calorific value. *Fisiol Zh.* 2008; 54(6): 38-41.
9. Ghazae SP, Gorenko ZA, Karbovska LS, Veselskiy SP, Yanchuk PI, Makarchuk MY. Desmopressin stimulates bile secretion in anesthetized rats. *Gen. Physiol. And Biophys.* 2010; 29(2): 151-159.
10. Yanchuk PI, Prikhodko TP, Pasichnichenko OM, Terekhov AA, Tsybenko VO. Mechanisms of Contractile Action of Acetylcholine on Hepatic Vein. *Intern. J. Physiol. and Pathophysiol.* 2011; 2(4): 379-387.
11. Grinchenko OA, Yanchuk PI. Pathways of Taurine Influence on the Gastric Secretion. *Int. J. Physiol. and Pathophysiol.* 2011; 2(3): 199-211.
12. Baskakov MB, Zheludeva AS, Gusakova SV, Yanchuk PI. Ionic mechanisms of carbon monoxide action on the contractile properties of smooth muscles of arterial vessels. *Fisiol Zh.* 2013; 59(3): 18-24.
13. Yanchuk PI, Vynogradova OO, Pasichnichenko OM, Kostenko SS. Participation of prostanoids in the contractile mechanism of rat portal vein to noradrenaline and adrenaline. *Fisiol Zh.* 2013; 59(6).
14. Veselska NS, Ghazae SP, Yanchuk PI, Makarchuk NY. Bile synthesis peculiarities following changes in the functional state of the endothelin receptors. *Jordan J. Biol. Sci.* 2014; 7(4): 287-291.
15. Yanchuk PI, Bondzyk OV, Reshetnik EM, Veselskiy SP. Effect of L-arginine on oxygen balance of the liver and the bile secretion function. *Intern. J. Physiol. and Pathophysiol.* 2014; 5(2): 1-11.
16. Yanchuk PI, Atamnah SM, Reshetnik EM, Levadyanska YA, Nikitina NO, Veselskiy SP. The role of serotonin in the regulation of tissue respiration and external function of the liver. *Fisiol Zh.* 2015; 61(2): 103-111.
17. Vovkun TV, Yanchuk PI, Shtanova LY, Shalamai AS. Tissue blood flow in the digestive organs of rats with acute pancreatitis after corvitin administration. *Fisiol Zh.* 2015; 61(6): 53-59.
18. Vinogradova OO, Yanchuk PI, Pasichnichenko AM. The role of thromboxane and leukotrienes in implementing contractile responses of portal vein caused by acetylcholine and norepinephrine. *Fisiol Zh.* 2015; 61(3): 70-75.
19. Yanchuk PI, Slobodyanyk LA. The role of hydrogen sulfide in regulation of liver blood flow. *Fisiol Zh.* 2015; 61(3): 28-34.
20. Vovkun T, Yanchuk P, Shtanova L, Veselskiy S, Shalamay A. Exocrine function of the liver in rats with exposure to Corvitin. *Fisiol Zh.* 2016; 62(3): 30-38.
21. Vovkun T.V., Yanchuk P.I., Shtanova L.Y., Veselskiy S.P., Filimonova N. B., Shalamay A.S., Vedmid V. G. The features of bile acids exchange in rats under the influence of corvitin // *Ukr. Biochem. J.* - 2017 - V. 89, № 5. - P. 106-116.
22. Vovkun T.V., Yanchuk P.I., Shtanova L.Y., Veselskiy S.P., Filimonova N. B., Shalamay A.S., Vedmid V. G. Water-soluble quercetin modulates the choleresis and bile lipid ratio in rats . *Gen. Physiol. Biophys.* – 2018. - V.37. P. 111-120.