

DAMIR SAPUNAR

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Birth date: 27 May 1962

Birthplace: Split, Croatia



Education / Training

1989 MD	University of Zagreb, School of Medicine
1992 MSc	University of Zagreb, Faculty of Science
1996 PhD	University of Zagreb, School of Medicine
1996	Honorary Visiting Fellow, University of Leicester, School of Medicine, Leicester, UK
2001-02	Postdoctoral training Medical College of Wisconsin, WI, USA

Positions and Honors

1992-1998	Instructor, Department of Anatomy, Histology and Embryology, University of Split School of Medicine
1998-2003	Assistant Professor, Department of Anatomy, Histology and Embryology, University of Split School of Medicine
2000-2001	Vice-dean for Education, University of Split School of Medicine
2003-2006	Associate Professor of Histology and Embryology, University of Split School of Medicine
2006-2009	President of Managing Council, National, and University Library Zagreb
1995-2011	Executive Editor - Online Edition, Croatian Medical Journal
2003-2013	Head, Department of Histology and Embryology, University of Split School of Medicine
2002-today	Head, Laboratory for Pain Research, University of Split School of Medicine
2006-today	Full Professor, Department of Anatomy, Histology, and Embryology
2008-2012	Head, Laboratory for Microscopy, University of Split School of Medicine.
2010-today	PhD Program director, Translation Research in Biomedicine – TRIBE, University of Split School of Medicine
2024-today	Member of ORPHEUS Executive Committee

Membership and activities in professional associations

Croatian Association of Anatomists and Histologists; Croatian Association of Medical Doctors; Croatian Association for Medical Education; International Society for Medical Informatics, International Federation of Associations of Anatomists – IFAA, European Federation of Experimental Morphology -EFEM, Society for Neuroscience, International Association for the Study of Pain, Orpheus.

Research experience

Effect of hyperbaric oxygen on rat embryos (1990–1996).

Research on normal and abnormal human development, with emphasis on the formation of axial structures, cell death, morphological diversity of dying cells, apoptosis, and programmed cell death (1990–2001).

Investigation of chronic pain, focusing on peripheral mechanisms of neuropathic pain; the effect of nerve injury on behavioral and electrophysiological properties of dorsal root ganglion (DRG) neurons; the role of NPY in neuropathic pain; methodologies for targeted drug delivery to the DRG; and the inflammatory consequences of drug application into the DRG (2001–2024).

Research on doctoral education, with a focus on social responsibility in doctoral education (2023–present).

Fellowships

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| 1996 | The fellowship of the International Society of Differentiation |
| 1996 | Honorary Visiting Fellow - Department of Pre-Clinical Sciences, Medical School, University of Leicester |
| 2001-2002 | Postdoctoral fellowship – Department of Anesthesiology, Medical College of Wisconsin |

Research grants

- Participation in the project "Formation of the head, axial and urogenital structures in the human embryos" supported by the Croatian Ministry of Science No. 3-01-069 (1992-1997)
- Main coordinator of ALIS project CRO19 "Programmed cell death in the axial structures of the human embryo" (1995-1998)
- Participation in the project "Development of the human central nervous system and spinal cord" No. 108194 (1997-2002)
- Main coordinator of CARNET project "Virtual Medical School"
- Main coordinator "Virtual Medical School" supported by the Croatian Ministry of Science and Technology No. 00-100
- Principal Investigator "Morphological diversity of the dying cells during human development" supported by the Croatian Ministry of Science and Technology, No. 108510 (2002-2006)
- Principal Investigator "Functional analysis of injured primary afferent neurons" supported by the Croatian Ministry of Science, Education and Sports No. 216-2160528-0522 (2007-2010)
- Project Coordinator, Unity Through Knowledge 2A (UKF) (2011)
- Participation in "Initiative for Improving Pain Education Grant" (IASP) (2009–2010)
- Main Coordinator "Nerve Injury and Neuropathic Pain" Program Project Grant supported by the Croatian Ministry of Science, Education and Sports No. 2160528 (2007-2013)
- Consultant in "DRG engraftment of transduced mesenchymal stem cells to treat neuropathic pain" NIH grant 5R01NS079626-02
- Participation in "Molecular Memory in Diabetic Neuropathy" (HRZZ) (2010-2013)
- Participation in "Auditory neuro-electronic interfaces" BICRO PoC (2012-today)
- Principal investigator in "Effect of electrical stimulation on analgesia", Croatian – Slovenian bilateral project, MZOS (2016)
- Principal investigator in "Treating neuropathic pain with dorsal root ganglion stimulation – NeuroMod" HRZZ (2014-2020)
- Main initiator of the "Giving Voice" project aimed at helping Ukrainian authors to publish war-related experiences

Teaching activities

Graduate education in Histology and Embryology; Elective subjects "Development and congenital kidney diseases", "Fertilization" and "The puzzle of Pain"

Postgraduate teaching – Postgraduate study Translational Research in Biomedicine-TRIBE, Medical School Split; CME Course "The Puzzle of Pain"

Visiting professor on postgraduate studies at the University of Nova Gorica, Medical School Rijeka, and Mostar

Other activities

1992-1995 Editorial Council of Science Communication 1991-1997 Editorial Council of Croatian Medical Annals

1996-2011 Executive editor – Electronic Publishing - Croatian Medical Journal

Reviews and evaluations:

Reviewer of research projects: COST, FP7, Horizon 2020, Croatian Science Foundation (HRZZ), AZVO, Hamag-BICRO, La Caixa Foundation, Dutch Research Council (NWO), ERA PerMed Personalised Medicine, EU4Healt, UKRI_ORG, MSCA4Ukraine.

Peer-reviewer for scholarly journals (only those with more than 5 articles): Anesthesia & Analgesia, Neurological Sciences, Cellular and Molecular Neurobiology, Croatian Medical Journal, Journal of Pain Research, European Journal of Pain, Journal of Clinical Anesthesia, Journal of Advanced Nursing, SpringerPlus, Clinical and Experimental Pharmacology and Physiology, Neuromodulation: Technology at the Neural Interface.

Scientometric data:

- Number of peer-reviewed articles: **120**
- [Web of Science profile](#): Number of citations according to the Web of Science: 1819 (without self-citations: 1683); H-index (Web of Science): 24
- [Google Scholar](#): Number of citations 3390; H-index 34
- [Scopus profile](#): Number of citations 2252; H-index 25
- Listed on the 2025 Stanford/Elsevier list of the World's Top 2% Scientists (August 2025 data update, [Updated Science-Wide Author Databases of Standardized Citation Indicators](#), Elsevier Data Repository, Version 8).

PUBLICATIONS (Chronological order)

1. Saraga-Babić M, Stefanović V, [Sapunar D](#). Relationship between embryonic notochord and chordoma. Med An 1992; 18: 205-212. (*Chemical Abstracts*)
2. Pintarić I, [Sapunar D](#), Gudelj I, Anđelinović Š, Kuzmić I. Remember they are humans. Croat Med J 1992; 33 Suppl 2: 34-35. (*EMBASE*)
3. Kraljević LJ, Boshi S, [Sapunar D](#). Contribution to the health services in Split. Croat Med J 1993; 34: 153-162. (*EMBASE*)
4. [Sapunar D](#), Saraga-Babić M, Peruzović M, Marušić M. The effect of hyperbaric oxygen on rat embryos. Biol Neonate 1993; 63: 360-369. (CC)
5. Saraga-Babić M, [Sapunar D](#), Stefanović V. Histological features of axial structures during embryonic and fetal stages of human craniorachischisis. Acta Neuropath 1993; 86: 289-294. (CC)
6. Vrdoljak E, Miše K, [Sapunar D](#), Rozga A, Marušić M. Survival Analysis of Untreated Patients With Non-Small Cell Lung Cancer. Chest 1994; 106: 1797-1800. (CC)
7. [Sapunar D](#), Bego K, Pintarić I, Markotić A, Radić S. Effect of maternal oxygen inhalation on the experimentally produced uteroplacental insufficiency. Period Biol 1994; 96: 47-48. (*Conference paper cited in Scopus*)
8. Radonić V, Barić D, Petričević A, Kovačević H, [Sapunar D](#), Glavina-Durdov M. War Injuries of the Crural Arteries. Br J Surg 1995; 82: 777-783. (CC)
9. [Sapunar D](#). Presentation Software in Teaching Practice: Do you Need Any Help Mr. Chips? MD Comp 1995; 12: 306-310. (CC)
10. Saraga-Babić M, [Sapunar D](#), Wartiovaara J. Variations in the Formation of the Human Caudal Spinal Cord. J Brain Res 1995; 36: 341-347. (*SCIE*)
11. Petričević A, Bačić A, Ilić Nenad, Giunio L, Matić D, [Sapunar D](#). Tupe ozljede srca i dijagnostičke teškoće. Liječ Vjesn 1995; 117: 227-231. (*Medline*)
12. Petričević A, Radonić V, Ilić N, Petričević M, Zelić Z, Ferenc J, [Sapunar D](#). Surgical experience at the Rama war hospital in Bosnia and Herzegovina. Isr J Med Sci 1995; 31: 630-634. (CC)
13. Saraga-Babić M, Stefanović V, Lehtonen E, [Sapunar D](#), Saraga M, Wartiovaara J. Neurulation mechanisms in the human development. Croat Med J 1996; 37: 7-14. (*EMBASE*)
14. Saraga-Babić M, Krolo M, [Sapunar D](#), Terzić J, Biočić M. Differences in origin and fate between the cranial and caudal spinal cord during normal and disturbed human development. Acta Neuropathol 1996; 91: 194-199. (CC)
15. [Sapunar D](#), Vilović K, Pintarić I, Vrdoljak E, Petri N, Saraga-Babić M. Effect of Maternal Hyperoxygenation on the Experimentally Produced Uteroplacental Insufficiency in Rat. Reprod Fertil Dev 1996; 8: 379-381. (CC)
16. Marušić M, [Sapunar D](#). Obrazloženje potrebe osnivanja Medicinskog fakulteta Sveučilišta u Splitu. Liječ Vjesn 1996; 118: 133-138. (*Medline*)
17. [Sapunar D](#), Sapunar-Cambj L. Internet u medicini. Liječ Vjesn 1996; 118: 165-171. (*Medline*)
18. [Sapunar D](#). Trenutno stanje biomedicinske znanosti u Splitu. Med An 1996; 20: 59-60.
19. Janković S, [Sapunar D](#), Jurišić Z, Majić V. Medical support to a nonprofessional brigade during the Croatian Operation Storm. Milit Med 1997; 162: 37-40. (CC)
20. Radonić V, Barić D, Giunio L, Bill B, Kovačević H, [Sapunar D](#). War injuries of the femoral artery and vein: a report on 67 cases. Cardiovasc Surg 1997; 5: 641-647. (*Medline*)

21. Radonić V, Budimir D, Bradarić N, Luksić B, Sapunar D. Envenomation by the Horned Viper - *Vipera ammodytes* Linnaeus. *Milit Med* 1997; 162: 179-182. (CC)
22. Janković S, Jurišić Z, Majić V, Mulić R, Bradarić N, Sapunar D, Smoljanović M, Gotovac P. Organization and implementation of the preventive medicine measures on the southern Croatian battleground: the experience of the home defense brigade. *International Review of the Armed Forces Medical Services* 1998; 71: 44-49.
23. Krolo M, Vilovic K, Sapunar D, Vrdoljak E, Saraga-Babic M. Fibronectin expression in the developing human spinal cord, nerves, and ganglia. *Croat Med J* 1998; 39(4):386-91. (Medline)
24. Janković S, Žuljan I, Sapunar D, Buća A, Pleština-Borjan I. Clinical and Radiological Management of Wartime Eye and Orbit Injuries. *Milit Med* 1998; 163: 423-426. (CC)
25. Radonić V, Barić D, Giunio L, Buća A, Sapunar D, Marović A. Surgical treatment of kinked carotid artery. *J Cardiovasc Surg* 1998; 39: 557-563. (CC)
26. Sapunar D. Computing for the next millennium. *Croat Med J* 1999; 40: 319-320. (CC)
27. Sapunar D, Marušić M. The curriculum plan for the Split University Medical School--a modern concept for a new school. *Liječ Vjesn* 1999; 121: 208-212. (Medline)
28. Vrdoljak E, Mise K, Sapunar D, Rozga A, Marusic M. Staging in untreated patients with small cell lung cancer. *Neoplasma*. 2001; 48(2):154-6, 2001. (CC)
29. Sapunar D. The Medical School of Split - overview of its activity from independence until today. *Liječ Vjesn* 2001; 123: 221-230. (Medline)
30. Sapunar D, Vilović K, England M, Saraga-Babić M. Morphological diversity of dying cells during regression of the human tail. *Ann Anat* 2001; 183: 217-222. (CC)
31. Vilović K, Sapunar D, Ilijić E, Mimica MD, England MA, Saraga-Babić M. Morphological characteristic of dying cells in axial structures of developing human embryos. *Cell Tissues Organs* 2001; 169(4): 347-54. (CC)
32. Sarantopoulos C, McCallum B, Sapunar D, Kwok WM, Hogan Q. ATP-sensitive potassium channels in rat primary afferent neurons: the effect of neuropathic injury and gabapentin. *Neurosci Lett* 2003;343(3):185-9.
33. Hogan Q, Sapunar D, Modric-Jednacak K, McCallum JB. Detection of neuropathic pain in a rat model of peripheral nerve injury. *Anesthesiology* 2004;101(2):476-87.
34. Vilovic K, Ilijic E, Glamoclija V, Kolic K, Bocina I, Sapunar D. Cell death in developing human spinal cord. *Anat Embryol* 2006;211(1):1-9.
35. Glamoclija V, Vilovic K, Saraga-Babic M, Baranovic A, Sapunar D. Apoptosis and active caspase-3 expression in human granulosa cells. *Fertil Steril* 2005;83(2):426-31.
36. Sapunar D, Ljubković M, Lirk P, McCallum JB, Hogan QH. Distinct membrane effects of spinal nerve ligation on injured and adjacent dorsal root ganglion neurons. *Anesthesiology* 2005;103:360-76.
37. Sapunar D, Modric-Jednacak K, Grkovic I, Michalkiewicz M, Hogan Q. Effect of peripheral axotomy on pain-related behavior and dorsal root ganglion neurons excitability in NPY transgenic rats. *Brain Res* 2005;1063(1):48-58.
38. Ivanisevic R, Sapunar D. Multiple authorship in a small medical journal - A case study: *Croatian Medical Journal. JASIST* 2006;57(8):1073-1078. (CC)
39. Carev D, Krnić D, Saraga M, Sapunar D, Saraga-Babić M. Role of mitotic, pro-apoptotic and antiapoptotic factors in human mesonephric and metanephric development. *Pediatric Nephrology* 2006;21:627-36.
40. Vilovic K, Jurcevic S, Ivanisevic R, Sapunar D. Clinical skills teaching – Survey at medical school in Split and Zagreb. *Medicina* 2006;42:26-30.
41. McCallum JB, Kwok WM, Sapunar D, Fuchs A, Hogan Q. Painful peripheral nerve injury decreases calcium current in axotomized sensory neurons. *Anesthesiology* 2006 Jul;105(1):160-8.
42. Znaor L, Lovric S, Hogan Q, Sapunar, D. Association of neural inflammation with hyperalgesia following spinal nerve ligation, *Croat Med J*, 48 (2007) 35-42.
43. Vukojević K, Lovrić-Kojundžić S, Sapunar D. Hyperalgesia-type response reveals no difference in pain-related behavior between Wistar and Sprague-Dawley rats. *Bosn J Basic Med Sci* 2007 May;7(2):121-6.
44. Vukojević K, Carev D, Sapunar D, Popovic D, Saraga-Babic M. Developmental patterns of caspase-3, bax and bcl-2 proteins expression in the human spinal ganglia. *J Mol Histol* 2008; 39: 339-349.
45. Puljak L, Brnjas Kraljevic J, Barac Latas Vesna, Sapunar D. Demographics and motives of medical school applicants in Croatia. *Med Teach*. 2007 Oct;29(8):e227-34. (CC).
46. Simunovic VJ, Petkovic M, Miscia S, Petrovic M, Stallaerts R, Busselmaier W, Hebgen M, Horsch A, Horsch S, Krzan M, Svab I, Ribaric S, Zeleznik D, Santa Barbara J, Arapovic D, Bozic T, Duzel G, Ljubic F, Ostojic M, Skocibusic S, Spasojevic N, Zalihic A, Radic R, Mehic B, Nakas-Icindic E, Kordic D, Sapunar D, Tomic S, Ljuca F, Pranjic N, Seleskovic H, Tahirovic H, Tihic N, Bosnjak ZJ, Gamulin S, Kuzman I, Mandic Z, Kamberovic S, Hiljadnikova M, Tanović H. Short history of just mentorship and support. *Croat Med J*. 2008 Feb;49(1):18-21.
47. Puljak L, Sapunar D. Turning Croatian Science Into Policy. *Croat Med J* 2008; 49:155-7. (CC).
48. Puljak L, Vukojevic K, Lovric Kojundzic S, Sapunar D. Assessing clinical and life sciences performance of research institutions in Split, Croatia: 2000-2006. *Croat Med J* 2008; 49:164-74. (CC).

49. Puljak L, Lovric Kojundzic S, Sapunar D. Gender and academic medicine: a good pipeline of women graduates is not advancing. *Teach Learn Med*. 2008; 20(3):273-8. (CC).
50. Puizina-Ivić N, Sapunar D, Marasović D, Mirić L. An overview of Bcl-2 expression in histopathological variants of basal cell carcinoma, squamous cell carcinoma, actinic keratosis, and seborrheic keratosis. *Coll Antropol*. 2008 Oct;32 Suppl 2:61-5.
51. Lirk P, Poroli M, Rigaud M, Fuchs A, Fillip P, Huang C-Y, Ljubkovic M, Sapunar D, Hogan Q. Modulators of calcium influx regulate membrane excitability in rat dorsal root ganglion neurons. *Anesth Analg*. 2008 Aug;107(2):673-85. (CC).
52. Hogan Q, Lirk P, Poroli M, Rigaud M, Fuchs A, Fillip P, Ljubkovic M, Sapunar D. Restoration of calcium influx correct membrane hyperexcitability in injured rat dorsal root ganglion neurons. *Anesth Analg*. 2008 Sep;107(3):1045-51. (CC).
53. Lovric Kojundzic S, Dujmovic I, Grkovic I, Sapunar D. Regional differences in epidermal thickness and behavioral response following partial denervation of the rat paw. *Int J Neurosci*. 2008 Dec;118(12):1748-62. (CC).
54. Puljak L, Lovric Kojundzic S, Hogan QH, Sapunar D. Targeted delivery of pharmacological agents into rat dorsal root ganglion. *J Neurosci Methods*. 2009 Mar 15;177(2):397-402.
55. Kosta V, Lovric Kojundzic S, Cambj Sapunar L, Sapunar D. The extent of laminectomy affects pain-related behavior in a rat model of neuropathic pain. *Eur J Pain*. 2009 Mar;13(3):243-8.
56. Sapunar D, Puljak L. What can rats tell us about neuropathic pain? Critical evaluation of behavioral tests used in rodent pain models. *Periodicum biologorum* 2009; 111(2): 155-160.
57. Puljak L, Lovric Kojundzic S, Hogan Q, Sapunar D. Lidocaine injection into the rat dorsal root ganglion causes neuroinflammation and pain-related behavior. *Anesth Analg*. 2009 Mar 108;(3):1021-6.
58. Lovric Kojundzic S, Puljak L, Hogan Q, Sapunar D. Depression of Ca²⁺/Calmodulin-Dependent Protein Kinase II in Dorsal Root Ganglion Neurons after Spinal Nerve Ligation. *J Comp Neurol* 2010 Jan1;518(1):64-74.
59. Koceic A, Mestrovic A, Vrdoljak L, Vukojevic K, Barac-Latas V, Drenjancevic-Peric I, Biocina-Lukenda D, Sapunar D, Puljak L. Analysis of the elective curriculum in undergraduate medical education in Croatia. *Medical education* 2010;44(4):387-95
60. Guić MM, Košta V, Aljinović J, Sapunar D, Grković I. Characterization of spinal afferent neurons projecting to different chambers of the rat heart. *Neurosci Lett*. 2010 Jan 29;469(3):314-8.
61. Košta V, Guić MM, Aljinović J, Sapunar D, Grković I. Immunohistochemical characteristics of neurons in nodose ganglia projecting to the different chambers of the rat heart. *Auton Neurosci*. 2010; 155(1-2):33-8.
62. Sapunar D, Vukojevic K, Kostic S, Puljak L. Attenuation of pain-related behavior evoked by injury through blockade of neuropeptide Y Y2 receptor. *PAIN*. 2011;152:1173-1181.
63. Sapunar D, Kostic S, Banozic A, Ferhatovic L, Puljak L. Pain research in Croatia: Analysis of bibliometric trends. *Periodicum biologorum*. 2011;113(2):137-140.
64. Maric A, Banozic A, Cosic A, Kraljevic S, Sapunar D, Puljak L. Validation of the Croatian Pain Catastrophizing Scale through a study on the influence of medical education on pain catastrophizing. *Periodicum biologorum*. 2011;113(2):171-175.
65. Kraljevic S, Banozic A, Maric A, Cosic A, Sapunar D, Puljak L. Parents' pain catastrophizing is related to pain catastrophizing of their adult children. *International Journal of Behavioral Medicine*. 2012 Mar;19(1):115-9.
66. Puljak L, Sapunar D. Web-based elective courses for medical students: an example in Pain. *Pain Medicine*. 2011;12(6):854-63.
67. Fischer G, Kostic S, Nakai H, Park F, Sapunar D, Yu H, Hogan Q. Direct injection into the dorsal root ganglion: technical, behavioral, and histological observations. *J Neurosci Methods*. 2011 Jul 15;199(1):43-55. Epub 2011 Apr 21.
68. Sapunar D, Kostic S, Banozic A, Puljak L. Dorsal root ganglion – a potential new target for neuropathic pain. *J Pain Res* 2012;5:31-8.
69. Grkovic I, Sapunar D, Marusic M. Ways to address challenges of a modern medical curriculum: living academic medicine at the University of Split School of Medicine. *Acta Medica Academica* 2012;41(1):7-17.
70. Ferhatovic L, Banozic A, Kostic S, Sapunar D, Puljak L. Sex differences in pain-related behavior and expression of calcium/calmodulin-dependent protein kinase II in dorsal root ganglia of rats with diabetes type 1 and type 2. *Acta Histochem*. 2013 Jun;115(5):496-504.
71. Jukic M, Kardum G, Sapunar D, Puljak L. Treatment of chronic musculoskeletal back pain in a tertiary care pain clinic. *Journal of Musculoskeletal Pain* 2012; 20(4): 277-283.
72. Klinar I, Ferhatovic L, Banozic A, Raguz M, Kostic S, Sapunar D, Puljak L. Physicians' attitudes about interprofessional treatment of chronic pain: family physicians are considered the most important collaborators. *Scand J Caring Sci*. 2013;27(2):303-10.
73. Busic Z, Kostic S, Kosta V, Carija R, Puljak L, Sapunar D. Postlaminectomy stabilization of the spine in a rat model of neuropathic pain reduces pain-related behavior. *Spine (Phila Pa 1976)*. 2012 Oct 15;37(22):1874-82.

74. Kostic S, Puljak L, [Sapunar D](#). Attenuation of pain-related behavior evoked by carrageenan injection through blockade of neuropeptide Y Y1 and Y2 receptors. *Eur J Pain* 2013;17(4):493.
75. Maslov Kruzicevic S, Barisic KJ, Banozic A, Esteban CD, [Sapunar D](#), Puljak L. Predictors of attrition and academic success of medical students: a 30-year retrospective study. *PloS ONE* 2012;7(6):e39144. Epub 2012 Jun 18.
76. Ferhatovic L, Banozic A, Kostic S, Ticinovic Kurir T, Novak A, Vrdoljak L, Heffer M, [Sapunar D](#), Puljak L. Expression of calcium/calmodulin-dependent protein kinase II and pain-related behavior in rat models of type 1 and type 2 diabetes. *Anesthesia & Analgesia*. *Anesth Analg*. 2013; 116(3): 712-21.
77. Gemes G, Koopmeiners A, Rigaud M, Lirk P, [Sapunar D](#), Bangaru ML, Vilceanu D, Garrison SR, Ljubkovic M, Mueller SJ, Stucky CL, Hogan QH. Failure of Action Potential Propagation in Sensory Neurons: Mechanisms and Loss of Afferent Filtering in C-type Units after Painful Nerve Injury. *J Physiol* 2013;591(Pt4):111-31.
78. Markotic F, Cerni Obrdalj E, Zalihic A, Pehar R, Hadziosmanovic Z, Pivic G, Durasovic S, Grgic V, Banozic A, [Sapunar D](#), Puljak L. Adherence to pharmacological treatment of chronic non-malignant pain in individuals aged 65 and older. *Pain Medicine* 2013;14(2):247-56.
79. Cosic A, Ferhatovic L, Banozic A, Kraljevic S, Maric A, [Sapunar D](#), Puljak L. Pain catastrophizing changes during menstrual cycle. *Psychology, Health & Medicine*. 2013;18(6):735-41.
80. Tesija RA, Maslov Kruzicevic S, Banozic A, Esteban CD, [Sapunar D](#), Puljak L. Extension of the course duration and stricter study organization have positive impact on attrition and academic performance of medical students. *Croatian Medical Journal*. 2013;54:192-7.
81. Vrdoljak L, Mijacika T, Milicevic T, [Sapunar D](#), Puljak L. Impact of a recruitment campaign on students' applications to medical school. *Acta Medica Academica*. 2013;42(1):32-40.
82. Jelcic Kadic A, Boric M, Ferhatovic L, Banozic A, [Sapunar D](#), Puljak L. Intrathecal inhibition of calcium/calmodulin-dependent protein kinase II in diabetic neuropathy adversely affects pain-related behavior. *Neurosci Lett*. 2013;554:126-30.
83. Yu H, Fischer G, Ferhatovic L, Fan F, Light AR, Weihrauch D, [Sapunar D](#), Nakai H, Park F, Hogan QH. Intraganglionic AAV6 results in efficient and long-term gene transfer to peripheral sensory nervous system in adult rats. *PLoS One*. 2013;8(4):e61266.
84. Kadic AJ, Boric M, Kostic S, [Sapunar D](#), Puljak L. The effects of intraganglionic injection of calcium/calmodulin-dependent protein kinase II inhibitors on pain-related behavior in diabetic neuropathy. *Neuroscience*. 2013;256:302-8.
85. Borić M, Jelcic Kadic A, Ferhatović L, Sapunar D, Puljak L. Calcium/calmodulin-dependent protein kinase II in dorsal horn neurons in long-term diabetes. *Neuroreport* 2013;24(17):992-6.
86. Banozic A, Grkovic I, Puljak L, [Sapunar D](#). Behavioral changes following experimentally induced acute myocardial infarction in rats. *Int. Heart J*. 2014;55(2):169-77.
87. Kostic S, Pan B, Guo Y, Yu H, [Sapunar D](#), Kwok WM, Hudmon A, Wu HE, Hogan QH. Regulation of voltage-gated Ca(2+) currents by Ca(2+)/calmodulin-dependent protein kinase II in resting sensory neurons. *Mol Cell Neurosci* 2014;62:10-8.
88. Chen Y, Chalmers I; TTI Editorial Alliance. Testing treatments interactive (TTi): helping to equip the public to promote better research for better health care. *J Evid Based Med*. 2015 May;8(2):98-102.
89. Fidahić M, Dogan K, [Sapunar D](#), Puljak L. National survey of pain clinics in Croatia: Organization and services. *Acta Med Acad*. 2015;44(1):18-30.
90. Maxwell LJ, Wells GA, Simon LS, Conaghan PG, Grosskleg S, Scrivens K, Beaton DE, Bingham CO 3rd, Busse JW, Christensen R, Goel N, Jüni P, Kaiser U, Lyddiat A, Mease PJ, Ostelo RW, Phillips K, [Sapunar D](#), Singh JA, Strand V, Taylor AM, Terwee CB, Tugwell P. Current State of Reporting Pain Outcomes in Cochrane Reviews of Chronic Musculoskeletal Pain Conditions and Considerations for an OMERACT Research Agenda. *J Rheumatol*. 2015 Sep 15. pii: jrheum.141423. [Epub ahead of print]
91. Jelcic Kadic A, Vucic K, Dosenovic S, [Sapunar D](#), Puljak L. Extracting data from figures with software was faster, with higher interrater reliability than manual extraction. *J Clin Epidemiol*. 2016 Jun;74:119-23.
92. [Sapunar D](#), Grković I, Lukšić D, Marušić M. Management of teaching processes using the Share point platform: A case study from the University of Split School of Medicine. *Acta Med Acad*. 2016 May;45(1):34-8.
93. [Sapunar D](#), Grković I, Lukšić D, Marušić M. The business process management software for successful quality management and organization: A case study from the University of Split School of Medicine. *Acta Med Acad*. 2016 May;45(1):26-33.
94. Markotic F, Cerni Obrdalj E, Zalihic A, Pehar R, Hadziosmanovic Z, Pivic G, Durasovic S, Grgic V, Banozic A, [Sapunar D](#), Puljak L. Adherence To Pharmacological Treatment Of Chronic Non-Malignant Pain In Individuals Aged 65 and Older. *Clin Ther*. 2016 Oct 6;38(10S):e11
95. Repić T, Madirazza K, Bektur E, [Sapunar D](#). Characterization of dorsal root ganglion neurons cultured on silicon micro-pillar substrates. *Sci Rep* 2016;23(6):39560.

96. Riado Minguez D, Kowalski M, Vallve Odena M, Longin Pontzen D, Jelacic Kadic A, Jeric M, Dosenovic S, Jakus D, Vrdoljak M, Poklepovic Pericic T, [Sapunar D](#), Puljak L. Methodological and Reporting Quality of Systematic Reviews Published in the Highest Ranking Journals in the Field of Pain. *Anesth Analg*. 2017 Oct;125(4):1348-1354.
97. Viđak M, Tokalić R, Marušić M, Puljak L, [Sapunar D](#). Improving completion rates of students in biomedical PhD programs: an interventional study. *BMC Med Educ*. 2017 Aug 25;17(1):144.
98. Vuka, I, Vučić K, Repic K, Ferhatovic Hamzić L, [Sapunar D](#), Puljak L. Electrical Stimulation of Dorsal Root Ganglion in the Context of Pain: A Systematic Review of *In Vitro* and *In Vivo* Animal Model Studies. *Neuromodulation* 2017 Nov 20. doi: 10.1111/ner.12722
99. Puljak L, [Sapunar D](#). Acceptance of a systematic review as a thesis: survey of biomedical doctoral programs in Europe. *Syst Rev*. 2017 Dec 12;6(1):253. doi: 10.1186/s13643-017-0653-x.
100. [Sapunar D](#), Marušić M, Puljak L, Grković I, Malički M, Marušić A, Čivljak M, Tanjić Ž. The Medical School of the Catholic University of Croatia: Principles, Goals, Standards and Organization. *Acta Med Acad*. 2018 May;47(1):61-75. doi: 10.5644/ama2006-124.215.
101. Vuka I, Marciuš T, Došenović S, Ferhatović Hamzić L, Vučić K, [Sapunar D](#), Puljak L. Neuromodulation with electrical field stimulation of dorsal root ganglion in various pain syndromes: a systematic review with focus on participant selection. *J Pain Res*. 2019 Feb 27;12:803-830.
102. Saratlija Novakovic Z, Puljak L, [Sapunar D](#), Remzi M, Fajkovic H, Resch I, Abufaraj M, Riedl C, Engelhardt P, Hübner W, Breinl E, Duvnjak M, Seklehner S. Overactive bladder symptoms in patients undergoing rigid and flexible cystoscopy. *World J Urol*. 2020 Aug;38(8):1989-1996.
103. Vuka I, Marciuš T, Došenović S, Ferhatović Hamzić L, Vučić K, [Sapunar D](#), Puljak L. Efficacy and safety of pulsed radiofrequency as a method of dorsal root ganglia stimulation in patients with neuropathic pain: a systematic review. *Pain Medicine* 2020; 1-24. doi: 10.1093/pm/pnaa141.
104. Vuka I, Došenović S, Marciuš T, Ferhatović Hamzić L, Vučić K, [Sapunar D](#), Puljak L. Efficacy and safety of pulsed radiofrequency as a method of dorsal root ganglia stimulation for treatment of non-neuropathic pain: a systematic review. *BMC Anesthesiology* 2020;20; 105. doi: 10.1186/s12871-020-01023-9.
105. Vuka I, Marciuš T, Kovačić D, Šarolić A, Puljak L, [Sapunar D](#). Implantable, Programmable, and Wireless Device for Electrical Stimulation of the Dorsal Root Ganglion in Freely-Moving Rats: A Proof of Concept Study. *J Pain Res*. 2021 Dec 9;14:3759-3772. doi: 10.2147/JPR.S332438.
106. Krnic Martinic M, Čivljak M, Marušić A, [Sapunar D](#), Poklepović Perićić T, Buljan I, Tokalić R, Mališa S, Neuberg M, Ivanišević K, Aranza D, Skitarelić N, Zoranić S, Mikšić Š, Čavić D, Puljak L. Web-Based Educational Intervention to Improve Knowledge of Systematic Reviews Among Health Science Professionals: Randomized Controlled Trial. *J Med Internet Res*. 2022 Aug 25;24(8):e37000. doi: 10.2196/37000.
107. Lerognon E, Marciuš T, Šarolić A, Kovačić D, Braeken D, [Sapunar D](#). Directionality quantification of in vitro grown dorsal root ganglion neurites using Fast Fourier Transform. *J Neurosci Methods* 2023; 386, 15 February; 109796.
108. Gabelica M, [Sapunar D](#), Marušić M, Puljak L. The ideal repository for hosting data from clinical trials blueprint using business process management. *F1000Research* 2023, 10:23.
109. Banić S, [Sapunar D](#), Buljan I. Changes in information-seeking patterns and perception of health crisis management in a year of COVID-19 pandemic: a repeated cross-sectional study. *Croat Med J* 2023;64:41-51.
110. [Sapunar D](#), Puljak L. Giving Voice project – helping authors publish reports about the consequences of the War in Ukraine. *ST-OPEN* 2023;4:e2023.2319.10.
111. Dmytriiev D, Nazarchuk O, Gambiroža L, Orlandić IN, Puljak L, [Sapunar D](#). Association between catastrophizing, postoperative pain, and injury severity in soldiers injured during the first year of the war in Ukraine: a cross-sectional study. *ST-OPEN* 2023; 4: e2023.2319.9
112. Ursić L, Žuljević MF, Vuković M, Bralić N, Roje R, Matas J, Mijatović A, [Sapunar D](#), Marušić A. Assessing the quality and completeness of reporting in health systems guidance for pandemics using the AGREE-HS tool. *J Glob Health* 2023;13:06050.
113. Gheorghe RO, Grosu AV, Magercu M, Ghenghea MS, Zbarcea CE, Tanase A, Negres S, Filippi A, Chiritoiu G, Gherghiceanu M, Dinescu S, Gaina G, [Sapunar D](#), Ristoiu V. Switching Rat Resident Macrophages from M1 to M2 Phenotype by Iba1 Silencing Has Analgesic Effects in SNL-Induced Neuropathic Pain. *Int. J. Mol. Sci.* 2023, 24, 15831.
114. Anonymous, [Sapunar D](#). An autoethnography of a 23-year-old student in Russia during the first year of war in Ukraine. *ST-OPEN*. 2024;5:e2024.2319.3
115. Marciuš T, Deftu AF, Vuka I, Braeken D, [Sapunar D](#). Electrophysiological properties of dorsal root ganglion neurons cultured on 3D silicon micro-pillar substrates. *J Neurosci Methods*. 2024 Jul;407:110143. doi: 10.1016/j.jneumeth.2024.110143. Epub 2024 Apr 25.
116. Kuchyn I, [Sapunar D](#), Horoshko V. Patterns of anatomical injury and anaesthesia procedures in wounded Ukrainian soldiers from Anti-Terrorist Operation/Operation Joint Forces: 2014-2021. *BMJ Mil Health*. 2024 May 2:e002633. doi: 10.1136/military-2023-002633.

117. Horoshko V, Kuchyn I, Bielka K, Sapunar D. Chronic pain and psychological well-being in soldiers wounded during Russo-Ukrainian war: a retrospective study. *Med Jadert* 2024;54(3):157-166.
118. Puljak L, Tolić M, Sablić M, Silobrić V, Heffer M, Polić B, Barčot O, Sapunar D. Difficulties in Accessing the List and Full Text of the Defended PhD Theses from Medical Schools: a Retrospective Case Study from Croatia. *Acta Med Acad.* 2024 Apr;53(1):1-9. doi: 10.5644/ama2006-124.437.
119. Sapunar D, Matijaca D, Shmatkova M, Gambiroža L, Nina Orlandić IN, Marušić M, Marušić A. The Croatian War of Independence (1991–1995) in medical literature: a 32-year scientometric review of the Croatian Medical Journal. *ST-OPEN.* 2024;5:e2024.2419.31.
120. Karasevska T, Fialkovska O, Mostbauer H, Tsybalyuk R, Gambiroža L, Orlandić IN, Shmatkova M, Puljak L, Sapunar D. Medical students' mental health after the first year of war in Ukraine: A cross-sectional study. *Journal of Health Psychology.* 2025;0(0). doi:10.1177/13591053251328916

Mentorship:

1. Puizina-Ivić N. Expression of Bcl-2 in histopathological variants of basal cell carcinoma, squamous cell carcinoma, actinic keratosis, and seborrheic keratosis. (Doctoral thesis). Zagreb: University of Zagreb School of Medicine, 2001.
2. Glamočlija V. Apoptosis and active caspase-3 expression in human granulosa cells. (Master of Science thesis). Split: University of Split School of Medicine, 2003.
3. Ilijić E. Morfologija umirućih stanica tijekom razvoja i obnavljanja epidermisa ljudske kože. (Master of science thesis). Split: University of Split School of Medicine, 2003.
4. Restović-Dujmović Ivana. Uloga eksperimentalno izazvane denervacije na morfologiju kože štakora. (Master of science thesis).). Split: University of Split School of Medicine, 2007.
5. Ljubo Znaor. Association of neural inflammation with hyperalgesia following spinal nerve ligation in the rat. (Medical School). Split, University of Split School of Medicine, 2007
6. Kosta V. Spine deformity in a rat model of neuropathic pain causes pain-related behavior. (Master of Science thesis). Split: University of Split School of Medicine, 2007.
7. Puljak L. Mechanisms of insulin resistance in an amiodaron model of fatty liver. (Doctoral thesis). Split: University of Split School of Medicine, 2008.
8. Lovrić-Kojundžić S. Depression of Ca2/Calmodulin-Dependent Protein Kinase II in Dorsal Root Ganglion Neurons after Spinal Nerve Ligation. (Doctoral thesis) Split, University of Split School of Medicine, 2009.
9. Elizabeth Wager. Peer review and editorial process for improving the quality of research reporting / (Doctoral thesis) Split: University of Split School of Medicine, 2010. 10
10. Bušić, Željko. Postlaminectomy stabilization of the spine in a rat model of neuropathic pain reduces pain-related behavior. (Doctoral thesis) Split: University of Split School of Medicine, 2012.
11. Sandra Kostić. Blockade of Y1 and Y2 Neuropeptide Y receptors attenuated pain-related behavior in a rat model of neuropathic and inflammatory pain. (Doctoral thesis) Split: University of Split School of Medicine, 2013.
12. Adriana Banožić: Behavioral changes following experimentally-induced acute myocardial infarction in rats. (Doctoral thesis) Split: University of Split School of Medicine, 2014.

Books and educational texts

- Saraga-Babić M, Švajger A, Sapunar D, Pintarić I, Anđelinović Š, Saraga M. Development, and congenital kidney diseases. University of Zagreb, Medical School -Split Branch, 1992.
- Banović I, Peruzović M, Saraga-Babić M, Sapunar D. Fertilization. University of Zagreb, Medical School Split Branch, 1992.
- Translation of the two chapters in "Basic Histology" Junqueira LC et al.
- Sapunar D. Education and Internet. In: Jakšić Ž, Pokrajac N, Šmaljcelj A. Art of medical teaching. Zagreb: Medical School Zagrebu, 2000.
- Saraga-Babić M, Sapunar D. Sobotta – Igrm kroz anatomiju 5: Embriologija. Jastrebarsko: Naklada Slap, 2002.
- Sapunar D, Pernjak Puigel E (Editors Croatian Edition). Sobotta – histološki atlas. Jastrebarsko: Naklada slap, 2004.
- Sapunar D, Saraga Babić M. Histology Atlas. University of Split Medical School, Split 2008.
- Sapunar D, Puljak L. 10 years of excellence. Split: University of Split School of Medicine, 2023.

Computer software

- Roje S, Sapunar D. Question Manager -QUEM (DOS version). Medical School -Split Branch, 1992.
- Saraga-Babić M, Sapunar D. Atlas of Human Embryology. Chronolab, Chrono Educa, 1996.
- Saraga-Babić M, Sapunar D, Puljak L, Vukojević K, Lovrić Kojundžić S. Histology Atlas. Virtual Medical School, 2007.
- Sapunar D. EduPlan. LAMA and University of Split, School of Medicine
- Sapunar D. LaTest. LAMA and University of Split, School of Medicine

Book reviews

- Sapunar D. Book Reviews -How to Learn and Teach in Medical School: A Learner-Centered Approach. Soc Sci Med 1996; 43: 132.
- Sapunar D. Book Review - Measurement and evaluation of health education. Soc Sci Med 1996; 43: 1525.
- Sapunar D. Book Review - The NPY family of peptides in immune disorders, inflammation, angiogenesis, and cancer. Croat Med J 2007; 48: 759-63.