



# Special Issue: State-of-the-Art Anatomical Research in the Mediterranean Region 2022

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The purpose of anatomy is the knowledge of the form of the living body, for which the relationship between what is seen and its function is pursued. In this way, anatomy becomes a causal and functional science: on the one hand, the form–function relationship is the result of individual ontogeny; on the other hand, it is also a phylogenetic result, the product of thousands of years of evolution. The application of anatomical knowledge, therefore, goes beyond surgery or scientific research, although these are its main interests, since it influences sectors such as education, general culture, art, fashion, sports, and even has an impact on the economies of some countries. In this sense, it is important to be able to draw on reliable sources of knowledge, which can include all aspects of the radius of influence of anatomical knowledge. The journal *Anatomia* is open to any research concerning anatomy, allowing for a rapid increase in the number of participants, readers, and citations. The way in which anatomy is taught in universities and other academic centers is also an important topic covered by the journal, whose results can be shared with the rest of the scientific community.

The aim of this Special Issue has been to increase the knowledge of any aspect of anatomical science according to the aim and scope of the journal *Anatomia*, which is focused on all aspects of anatomical sciences, from macroscopic and microscopic anatomy to modern techniques, including cell and molecular biology and anatomical formation. The researchers participating in this Special Issue have fully achieved this goal. They have focused their research on the following key points [1–7]: (1) online teaching alternatives in human anatomy (technical note); (2) short practice in human body dissection (opinion); (3) the deltoid muscle and its clinical implications (communication); (4) a missing flexor digitorum brevis tendon and its relationship to sex and ancestry (article); (5) lobe X of the cerebellum (review); (6) meningioma (review); and (7) relationships between the cholinergic and the somatostatinergic systems in alpaca (article). In this Special Issue, Dr. García Barrios and co-workers from the Department of Human Anatomy and Histology (Faculty of Medicine, University of Zaragoza) implemented a “breakout” activity, thanks to an online platform, that is similar to those used in people to increase motivation, teamwork, and interactivity. This activity was performed in a Human Anatomy II (splanchnology) course in which 89 students were enrolled: 86% of them recognized a positive effect of the activity on motivation and interactivity and 70% of the students indicated that the activity helped them enhance teamwork and integrate course content [1]. In a technical note, the authors say that “The reform of educational models has raised the need to adapt teaching to the needs of today’s working world and to focus on students as critical but above all participatory and active subjects. For this, teachers must make an effort to innovate the methodology and tools that have been used in teaching until now to meet the teaching competencies set out in the guide for each subject” [1]. The latter is crucial to improve teaching anatomy; the article published by García Barrios et al. [1] opens



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the door to this improvement because it is a novel, useful, and strong teaching approach that favors the learning of anatomy. In their study, Dr. Insausti et al. [2] from the Human Neuroanatomy Laboratory and Regional Centre for Biomedical Research (University of Castilla-La Mancha) concluded that human body dissections of the musculoskeletal system had a positive impact on human anatomy grades in first year medical students, and is valued and motivating. This is a study that shows the crucial role that dissection plays in teaching anatomy. Both studies mentioned demonstrate how the combination of classical and new educational models are necessary and complementary to adapt the teaching of anatomy to the needs of today [1,2]. This is undoubtedly the right approach to teaching anatomy to our future health science professionals. Although the main source of anatomical knowledge has been dissection (and therefore, teaching anatomy includes dissection), new technologies provide complementary tools with which to “see the function” of structures. The combination of these methods allows students to understand better, thus facilitating student interest and active participation in the learning of this discipline.

In a third paper, Gómez-Sánchez et al. [3], from the Section of Human Anatomy and Embryology (Faculty of Health Sciences, Rey Juan Carlos University), showed a new variation of the deltoid muscle (the additional belly of the deltoid muscle); they stated that the consideration of this variant is needed for the correct diagnosis and treatment of trauma or other shoulder pathology refractory to standard treatments and that surgeons must take this variation into consideration to avoid possible complications in surgery. Quiñones-Rodríguez et al. [4], from the Department of Clinical Anatomy (Sam Houston State University College of Osteopathic Medicine), studied the flexor digitorum brevis tendon and its relationship to sex and ancestry in a Hispanic population. The authors did not find a relationship between the absence/presence of the tendon to ethnicity/sex and they suggested the ability of the adjacent muscles to adapt to its absence; the absence of this tendon might become increasingly prevalent over time [4]. Moreover, they stated that the variations observed in the flexor digitorum brevis are of clinical importance for soft tissue reconstruction in foot surgery, tendon repair, and tendon transfer to correct deformities (e.g., hammer toe, claw toe) [4]. Díaz et al. [5], from the Laboratory of Neuronal Plasticity and Neurorepair (Institute of Neuroscience of Castilla y León, University of Salamanca), reviewed the role of the cerebellar lobe X. This region is neuroresistant; neurodegenerative factors affect Purkinje cells, but in lobe X these cells are more resistant to neurodegenerative mechanisms [5]. The authors reviewed the main models of cerebellar degeneration, including lobe X, and discussed the causes for its resistance to neuronal death. Dr. Rothschild from the Carnegie Museum (Pittsburgh) reviewed the criteria to identify meningiomas from hemangiomas, bone marrow hyperplasia (porotic hyperostosis), and osteosarcomas [6]. Finally, the editors of the Special Issue demonstrated the relationships between the somatostatinergic (somatostatin-28 (1–12)) and cholinergic (choline acetyltransferase) systems in alpaca brainstems [7]. An overlapping distribution pattern for both substances in many brainstem regions, a high innervation of the peptidergic fibers on cholinergic neurons, and the colocalization of the two substances in the same cell bodies were observed, suggesting a physiological interaction between these substances. These interactions could be crucial for the control of specific cardiorespiratory and/or digestive functions in alpacas. That is, this Special Issue covers topics focused on student anatomical formation and macroscopic and microscopic anatomy and reflects the multiplicity of approaches to the study of the contents of anatomy, as well as the importance of this discipline for multiple areas. The name of the journal, *Anatomia*, seems very simple, but it covers a large number of subjects in which, as Dr. Fornai says in his editorial [8], the entire scientific community can participate with their contributions.

In conclusion, the journal *Anatomia* offers the possibility of knowing, in addition to the enormous wealth of anatomical contents, multiple facets in which the application of anatomical knowledge contributes to a better development of various projects. In these cases, for example in teaching, the classical approach to the study of anatomy is as important as the tools provided by new technologies, so that both complement each other. The articles

published in this Special Issue are a clear example of this diversity of interests, as well as of the new possibilities offered by the combination of anatomical knowledge and the digital era.

**Conflicts of Interest:** The authors declare no conflict of interest.

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