

Jayathilake D.L., Al Juboori A.N.

**MORPHOMETRIC CHARACTERISTICS OF THE VERMIFORM APPENDIX
DEPENDING ON ITS POSITIONAL VARIANTS: LITERATURE REVIEW**

Tutor: PhD, associate professor Shastakovich K.M.

*Department of Normal Anatomy
Belarusian State Medical University, Minsk*

The vermiform appendix is one of the most anatomically variable segments of the gastrointestinal tract, showing a wide spectrum of positional variants and marked variation in length and diameter. Aleksandar et al. (2019) demonstrated that retrocecal and pelvic positions together account for more than half of all observed locations, whereas ileal, subcecal, paracecal and subhepatic variants are less common but remain clinically important. In line with these findings, Ahmed et al. studying large surgical and cadaveric series have reported a similar predominance of retrocecal and pelvic locations, while also emphasising the non-negligible frequency of subcecal, pre- and post-ileal variants. Papakonstantinou et al. (2024) and colleagues showed that atypical positions, especially retrocecal, pelvic and subhepatic, are associated with non-classical pain patterns, delayed diagnosis and a higher risk of complications. Popeliuk et al. further highlighted that the distribution of vermiform appendices variants may differ between populations. Aleksandar et al. further showed that the retrocecal position is the most prevalent configuration of the appendix, followed by the pelvic position, while ileal, subcecal, paracecal and subhepatic locations occur less frequently and may vary between populations.

Gomes et al. reported that mean appendix length across cohorts typically ranges from about 55 to 80 mm, within a broader span of roughly 20 to over 120 mm, with slightly greater values in males and a gradual increase from childhood to adulthood. Consistent with these data, Ahmed et al. and other morphometric studies of the vermiform appendix have documented a similarly broad range of lengths and confirmed sex- and age-related differences. Radiological studies have shown that the outer diameter of a non-inflamed appendix averages around 6 mm, yet larger diameters can still correspond to a normal organ and must therefore be interpreted only in conjunction with clinical data and additional imaging signs. According to the work of Papakonstantinou et al., particular positional variants are linked to atypical symptoms such as flank, lumbar or suprapubic pain, which can obscure the underlying appendiceal pathology, while other clinical and imaging-based studies have shown that such variants prolong the diagnostic process and raise the risk of perforation. At the same time, focused topographic and morphometric investigations, including those by Popeliuk et al. and other anatomically oriented groups, indicate that a systematic understanding of positional and morphometric variability enables the surgeon to anticipate non-standard intraoperative scenarios and reduce iatrogenic injury.

Thus, the reviewed evidence shows that the vermiform appendix exhibits marked variability in position and morphometric parameters, with retrocecal and pelvic locations predominating and a broad range of lengths and diameters across populations and ages. Positional variants are not merely descriptive curiosities, but factors that modify symptom patterns, complicate imaging assessment and may delay diagnosis, especially in retrocecal, pelvic, subcecal and subhepatic appendices. Overall, the converging results of anatomical, meta-analytic and imaging-based studies underscore the need for a focused synthesis of quantitative data on appendix length, diameter and topographical orientation by position.