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State of Synaptic Inhibition in Smooth Muscles of the Colon of Individuals of Different Ages

* [M. M. Grusha](https://link.springer.com/article/10.1007/s11062-018-9692-8#auth-M__M_-Grusha-Aff1) & [O. V. Romanenko](https://link.springer.com/article/10.1007/s11062-018-9692-8#auth-O__V_-Romanenko-Aff1)

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We examined the state of synaptic inhibition in smooth muscles (SMs) of the intestinal tract with special attention to the gender and age aspects. One hundred thirty-seven samples of the SMs taken from the circular layer of the colon wall of 22 women of different age (group IF, younger than 35 years, group IIF, 36–55 years, group IIIF, 56–74 years, and group IVF, 75 years and more) and 24 men (group IM, younger than 35 years, group IIM, 36–60 years, group IIIM, 61–74 years, and group IVM, 75 years and more). The state of synaptic inhibition was estimated according to values of the amplitude/kinetic parameters of inhibitory synaptic potentials (ISPs) in SM strips taken from different visually normal parts of the colon in the course of surgical interventions; the respective sites were at a distance of at least 10 cm form a pathologically modified zone of the colon. Parametric and nonparametric approaches were used in detailed statistical analysis of these parameters. No statistically significant differences were found between most amplitude/kinetic parameters of ISPs in the colonic SMs of women and men within all age groups and between these parameters in different age groups of women and men. Such results confirm the statement that, in humans, the efficacy of inhibitory synaptic transmission to SMs of the colon is mostly preserved during the entire lifespan, even against the background of age-related involution changes in the organism.

Author information

Authors and Affiliations

1. **Bogomolets National Medical University of the Ministry of Public Health of Ukraine, Kyiv, Ukraine**

M. M. Grusha & O. V. Romanenko

Corresponding author

Correspondence to M. M. Grusha.

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* **amplitude/kinetic parameters**
* **age-related involution changes**

