

ANATOMY

1. **DESCRIPTION:** This event encompasses the anatomy (structure and function) of the digestive and nervous systems.

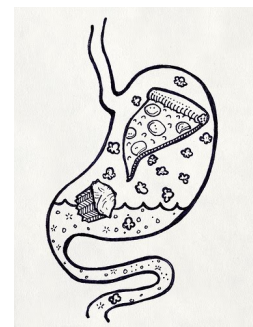
A TEAM OF UP TO: 2

APPROXIMATE TIME: 50 Minutes

2. **EVENT PARAMETERS:** Each team may bring **only** one 8.5" x 11" two-sided page of information in any form from any source and up to 2 non-programmable, non-graphing calculators.
3. **THE COMPETITION:** Students should know the basic anatomy of the digestive and **nervous** systems and how aging and specific diseases affect them. Process skills expected may include data collection, making observations, inferences, predictions, calculations, analyses and conclusions. The test may include various formats (e.g., timed stations, written test, slides, etc.) **limited** to the following topics:

a. **DIGESTIVE SYSTEM - All levels should know:**

- i. Functions of the digestive system
- ii. Basic anatomy of the component parts of the alimentary canal and accessory organs of digestion
- iii. Anatomy of the four layers of the wall of the alimentary canal
- iv. Comparison of the lining of the esophagus, stomach, small intestine and large intestine
- v. Compare and contrast mechanical and chemical digestion
- vi. The effects of exercise on the digestive system
- vii. The diseases on each level from the cell to the whole person as listed: stomach & duodenal ulcers, cancers of the digestive system, diarrhea, lactose intolerance, hepatitis, appendicitis
- viii. Treatment and prevention of all described diseases



National Level Only:

- ix. Specific functions of the liver and pancreas in the digestive system
- x. Additional diseases: Crohn's disease, GERD, diverticular disease

b. **NERVOUS SYSTEM - All levels should know:**

- i. The Brain - major regions of the brain and their functions
- ii. Sense Organs - regions of the sense organs and their functions
- iii. Disorders: Epilepsy, seizures, Alzheimer's Disease, Multiple Sclerosis and Parkinson's Disease, shingles (herpes zoster), cerebral palsy, glaucoma, pink eye (conjunctivitis)
- iv. Effects of drugs: alcohol, caffeine, nicotine, and marijuana on the nervous system



National Level Only:

- v. Central Nervous System - organization of the spinal cord
- vi. Neural Impulses - Cellular anatomy and types of neurons
- vii. Neural circuitry connecting the eye to the brain, tracing light detection from eye to brain
- viii. Treatment and prevention of described diseases and drugs

4. **SCORING:** High score wins. Selected questions/quality of free-response answers will be used to break ties.

Recommended Resources: All reference and training resources including the in-depth **Anatomy and Physiology CD (APCD)** and the introductory **Bio/Earth CD (BECD)** are available on the Official Science Olympiad Store or Website at <http://www.soinc.org>

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