

## The Human Organism > Disease

### Research on Student Learning

Elementary-school students may have the following ideas about germs: Germs are microorganisms causing illness; germs enter the body through the mouth while eating and leave the body through the mouth; every illness is caused by germs; all diseases are caused by the same kind of germ; the process of infection is automatic; any infection in the body necessarily makes it ill; and when medicine is administered, healing takes place immediately. [1]

Lower elementary-school children may think that illness is the result of misbehavior and realize that they are ill only when they are told that they are by others or when their illness has a behavioral impact, such as having to stay in bed or to go to the doctor. Upper elementary-school children may believe that all illnesses are caused by germs and are contagious. As students grow older, their beliefs about causes of illness begin to include also the malfunctioning of internal organs and systems, poor health habits, and genetics. Upper elementary students can understand that a change in internal body state or the experience of symptoms is the consequence of illness. [2]

### References

- [1] Nagy, M.H. (1953). The representations of "germs" by children. *Journal of Genetic Psychology*, 83, 227-240.
- [2] Hergenrather, J., Rabinowitz, M. (1991). Age-related differences in the organization of children's knowledge of illness. *Developmental Psychology*, 27, 952-959.