

• There are no conflicts of interest to report.

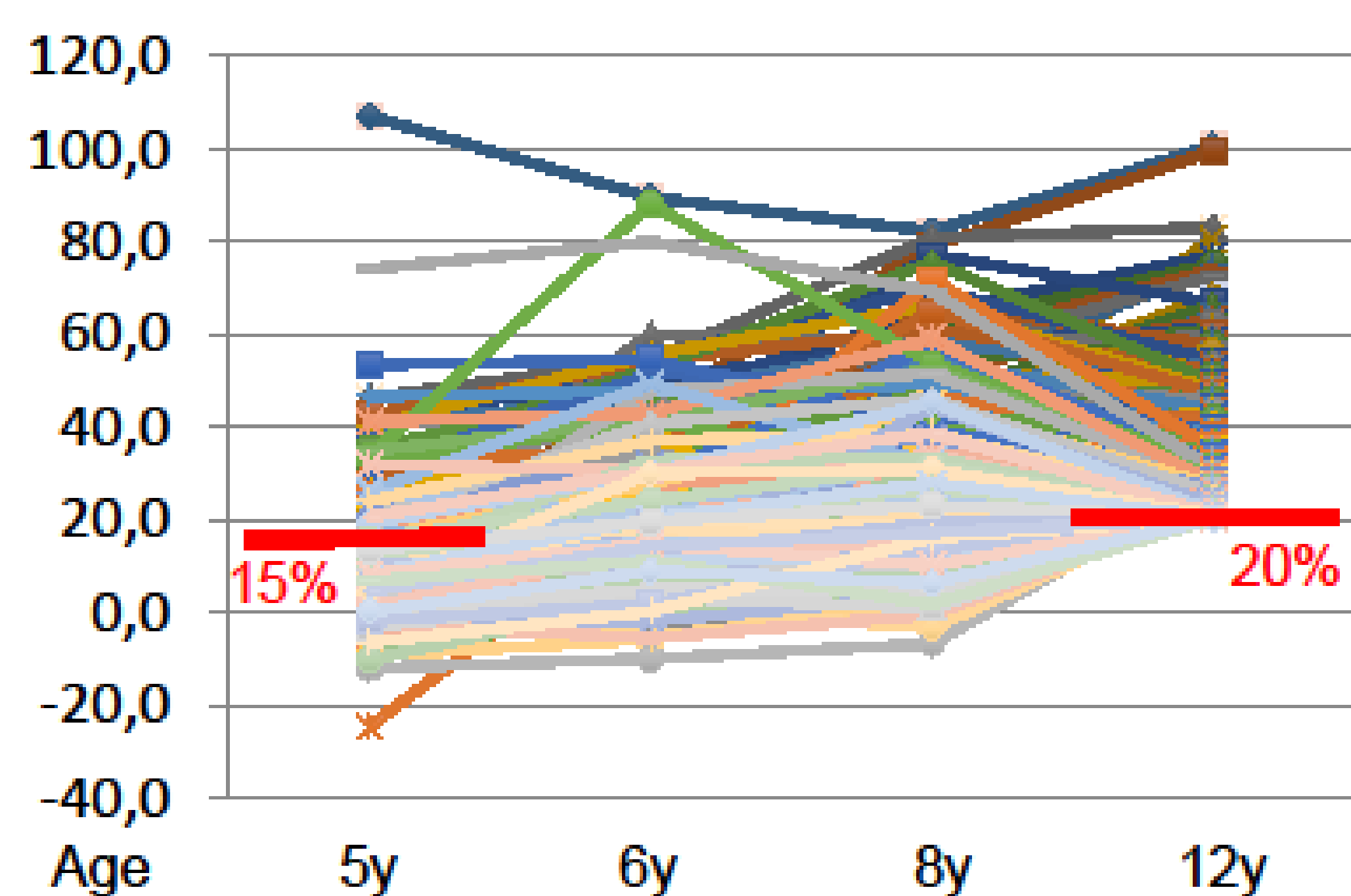
Background and Objective

- Childhood obesity starts in early childhood. The natural history of childhood obesity has not been reported and it is unknown how obese children in early childhood improve to become non-obese adolescents.
- To investigate the natural history of obese children from early childhood to puberty and identify patterns and trends in this process.

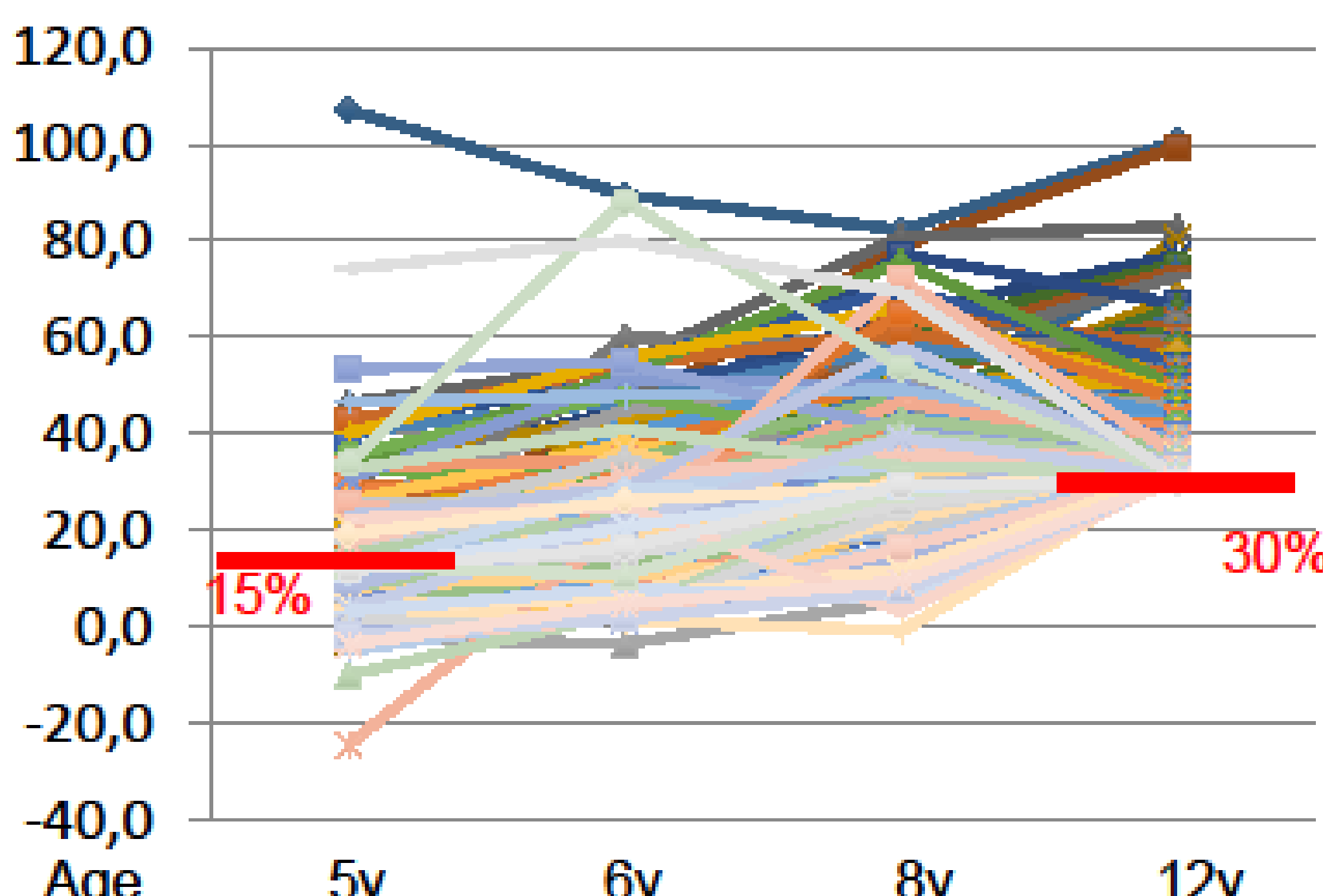
Subject and method

- 1207 children (614 boys and 593 girls) born in Fujioka town and Otawara city in Tochigi prefecture, Japan, were enrolled in this study.
- Height and weight were measured at 5, 6, 8 and 12 years of age.
- Obesity was characterized by an excess of $\geq +15\%$ and $\geq +20\%$ standard body weight at 5 and ≥ 6 years of age, respectively. We calculated the percentage of children who remained obese at 12 years of age.

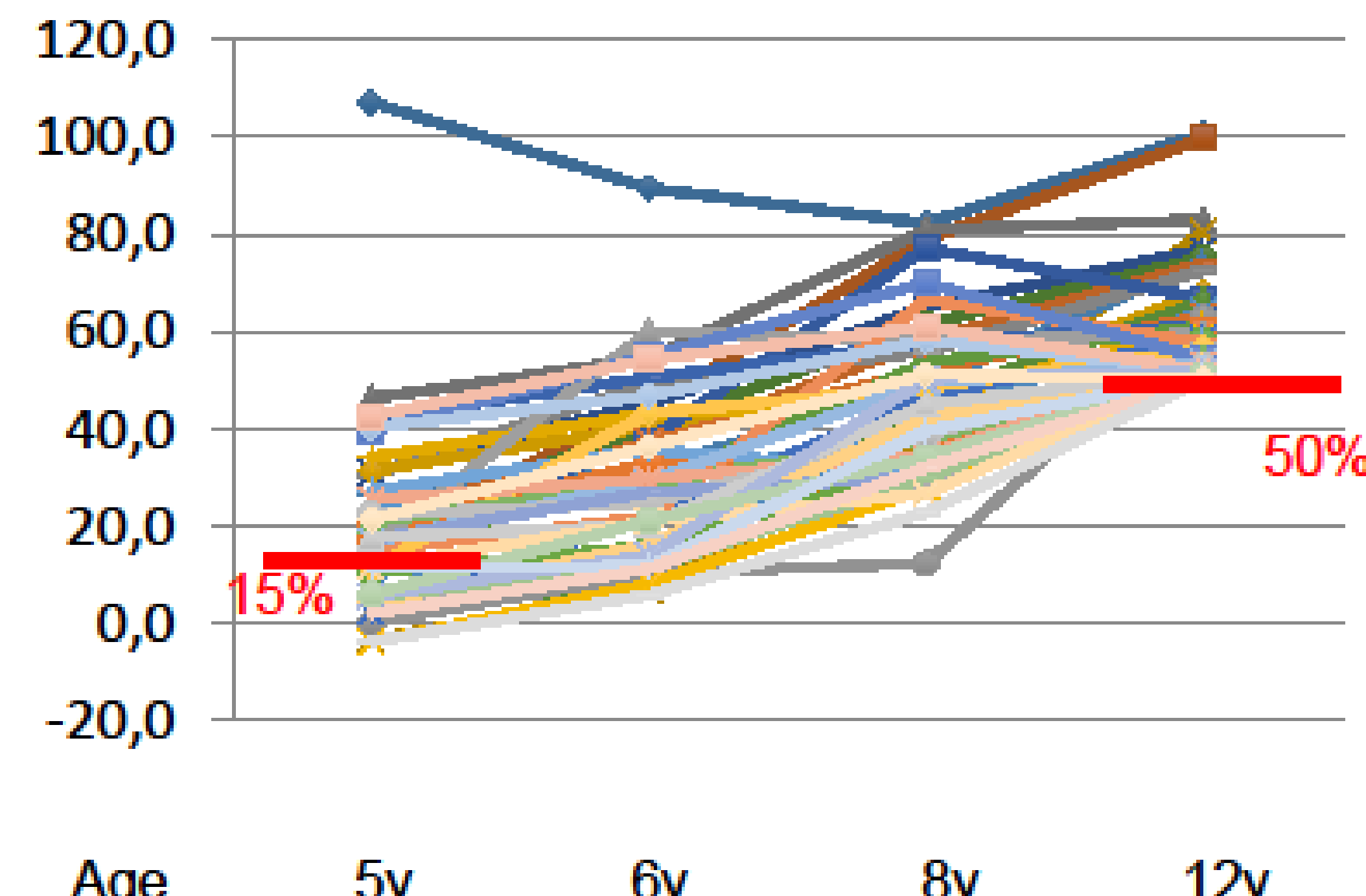
235 of 1207 (19.5%) children were obese ($\geq +20\%$ excess body weight) at age 12. 85 of 235 (36.2%) were obese at 5.



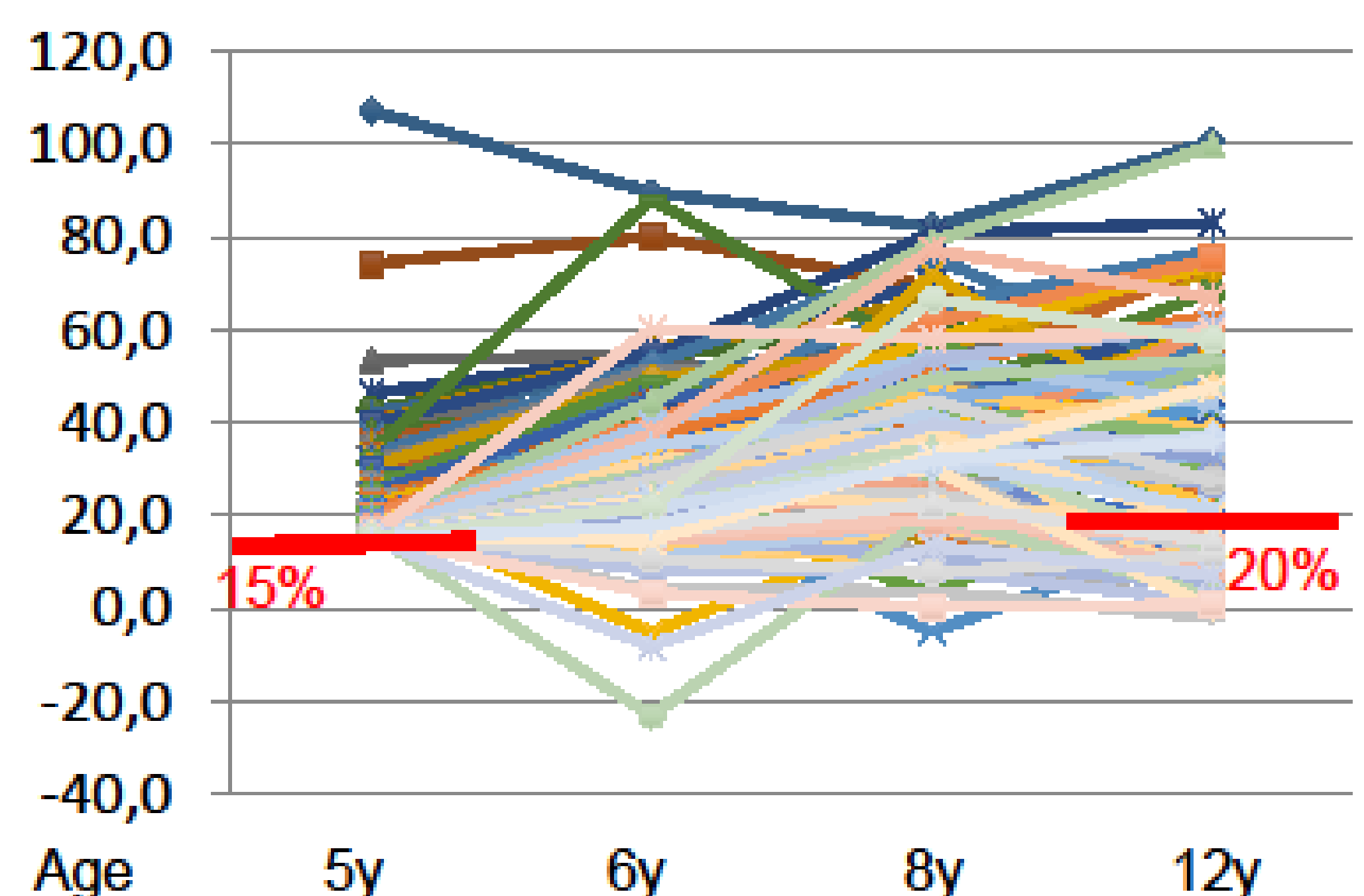
141 (11.7%) children were moderately and severely obese ($\geq +30\%$ excess body weight) at age 12. 70 of 141 (49.6%) were obese at 5.



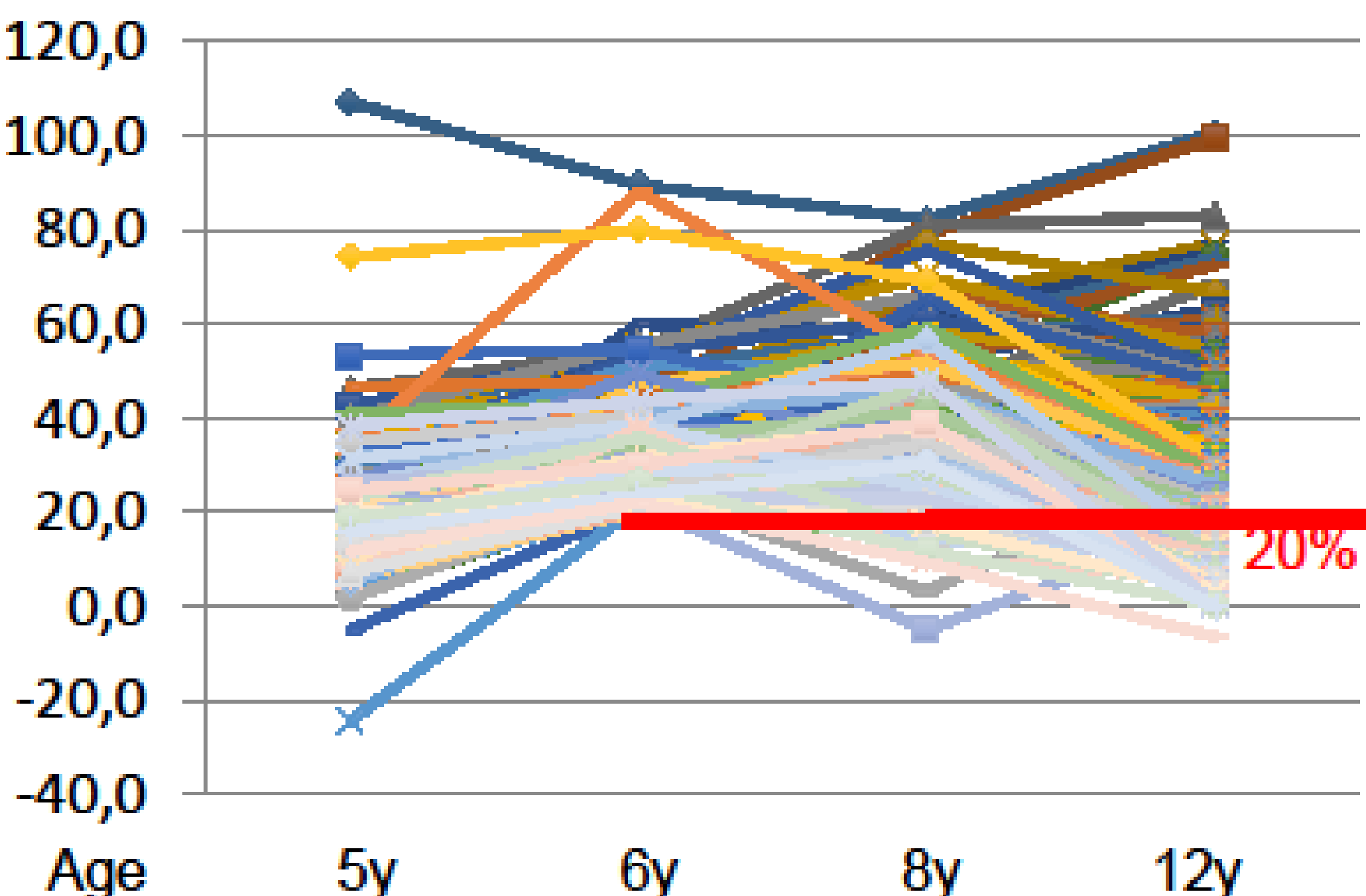
46 (3.8%) children were severely obese ($\geq +50\%$ excess body weight) at age 12. 29 of 46 (63.0%) were obese at 5.



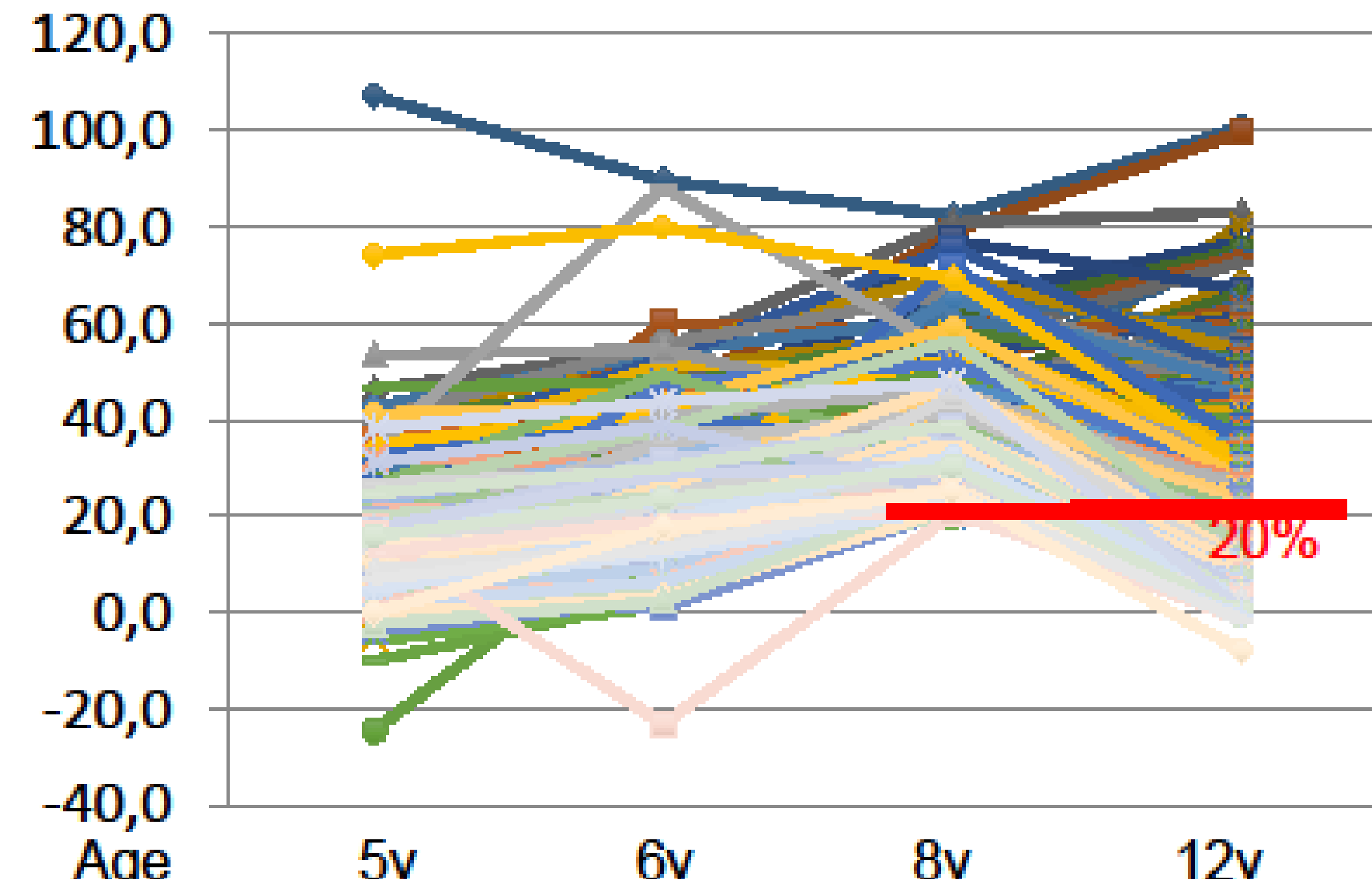
133 (11.0%) children were obese ($\geq +15\%$ excess body weight) at age 5. 85 of 133 (63.9%) remained obesity at 12.



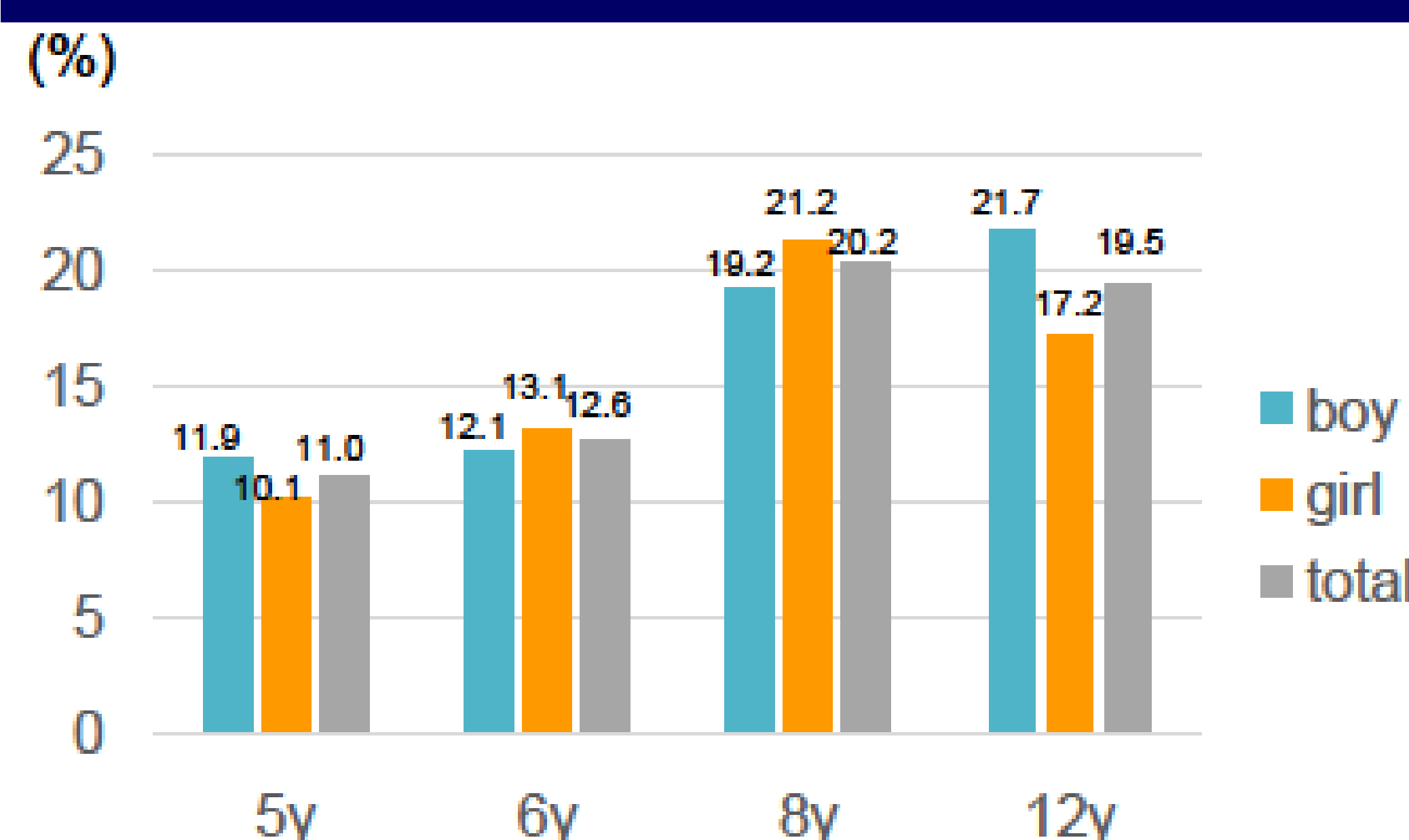
152 (12.6%) children were obese ($\geq +20\%$ excess body weight) at age 6. 110 of 152 (72.4%) remained obesity at 12.



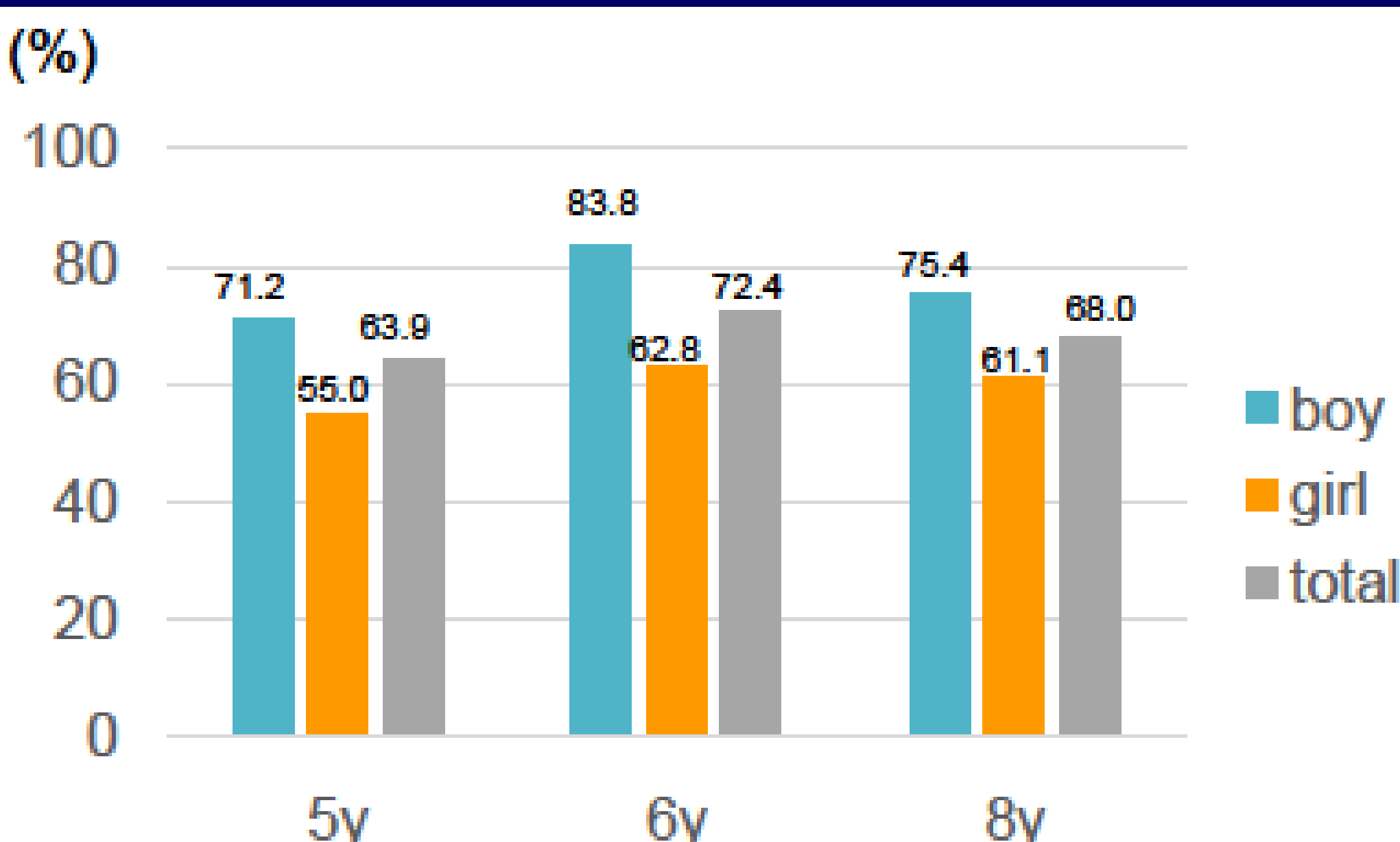
244 (20.2%) children were obese ($\geq +20\%$ excess body weight) at age 8. 166 of 244 (68.0%) remained obesity at 12.



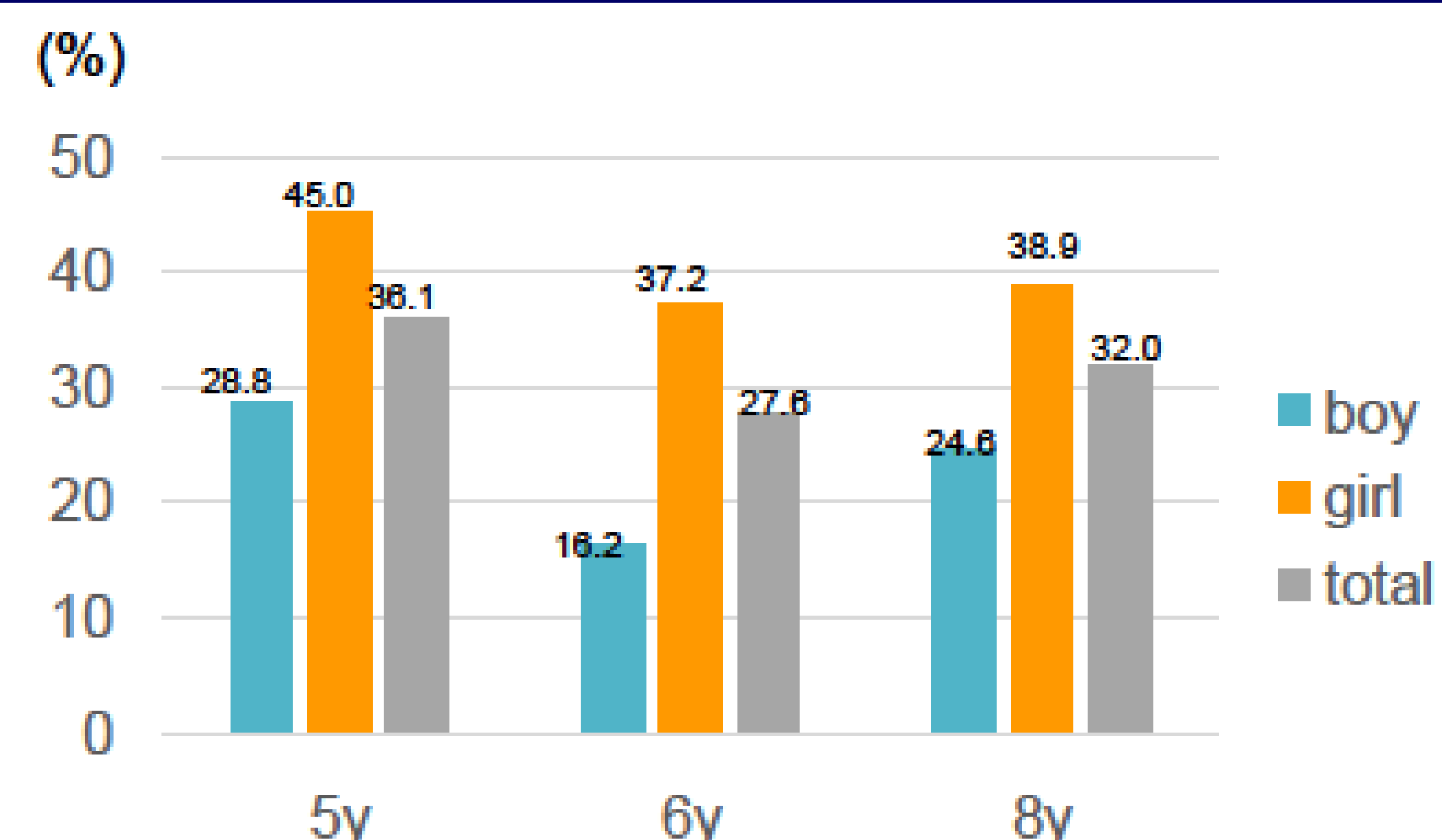
Rate (%) of obesity at 5, 6, 8 and 12y



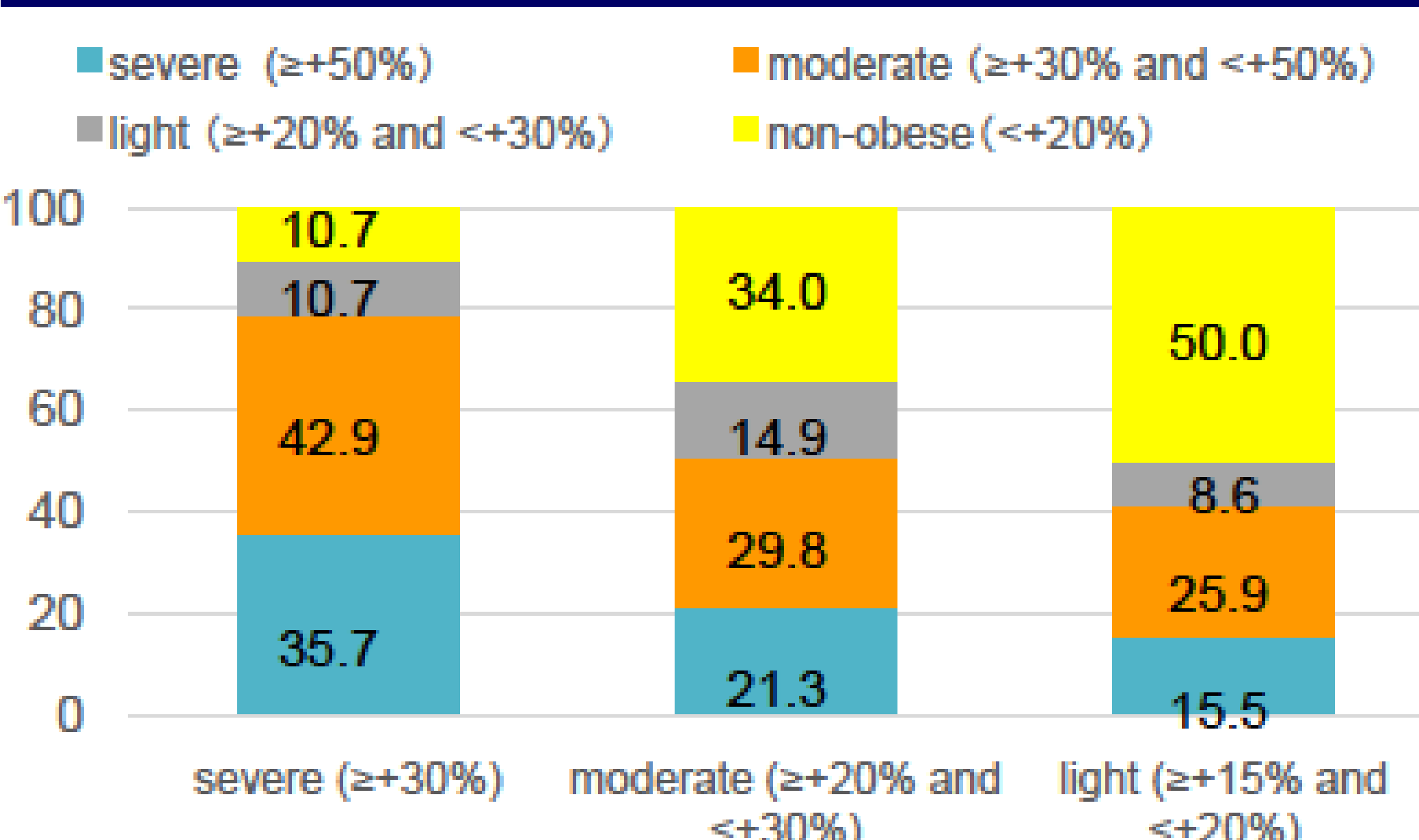
Rate (%) that obese children at 5,6 and 8y remained obesity at 12y



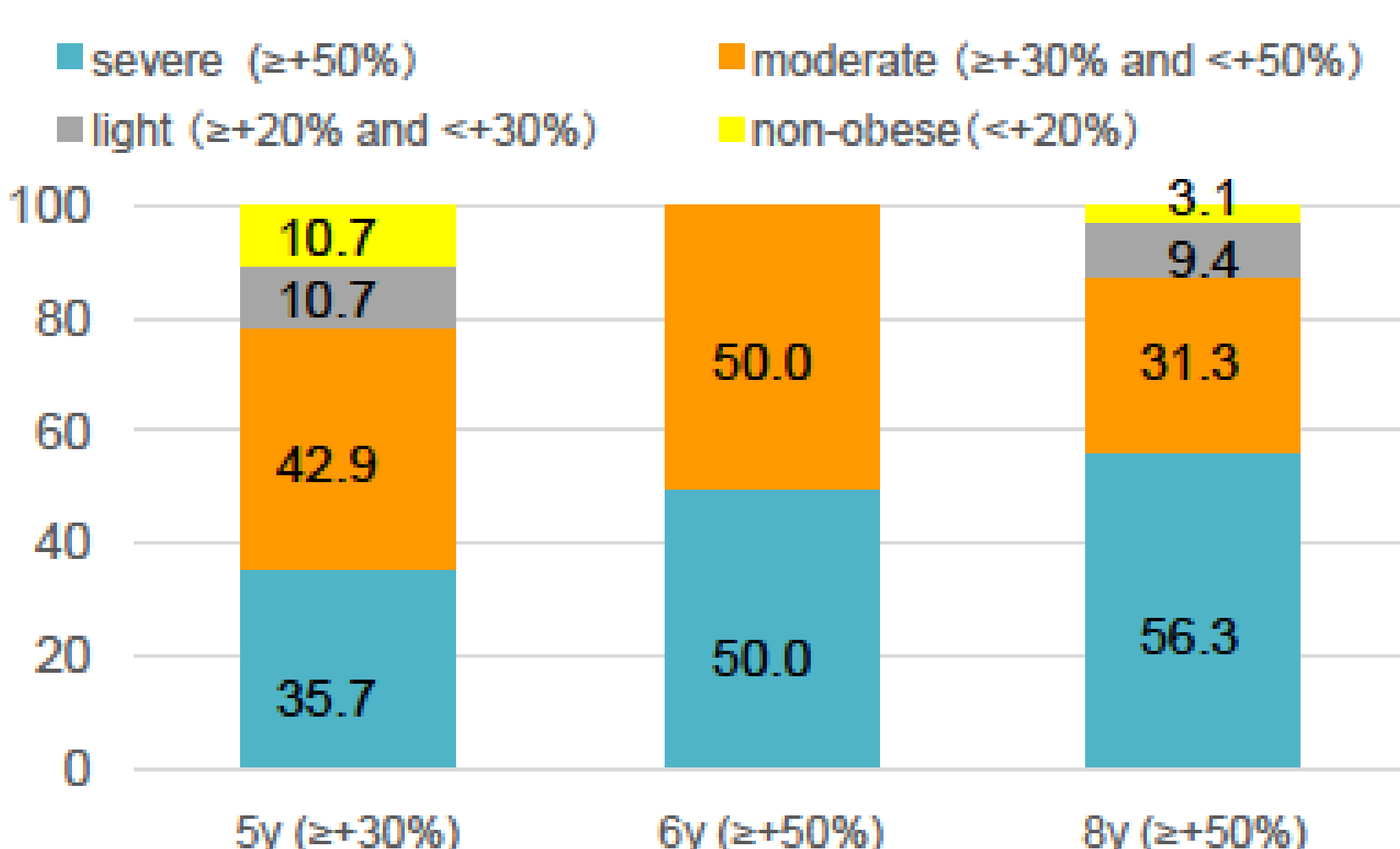
Rate (%) that obese children at 5,6 and 8y reversed obesity at 12y



Rate (%) that obese children at 5y remained obesity at 12y depends on severity of obesity at 5y



Rate (%) that severely obese children at 5, 6 and 8y remained obesity at 12y



Conclusion

Greater than 60% of the obese children in early childhood remained obese at 12 years of age. This endorses the importance of prevention and intervention of obesity before age 5.