



BMI AND PREVALENCE OF OBESITY IN LITHUANIAN ADOLESCENTS AND YOUNG ADULTS, 1980-2005

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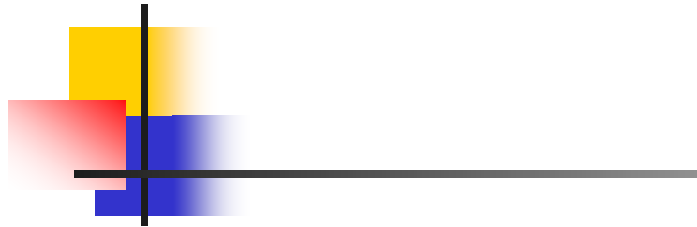


BMI in children and adolescents:

BMI > 85^P – for overweight

BMI > 95(97)^P – for obesity

- **WHO recommends to use CDC (2000) percentile charts (Centre for Disease Control, National Center for Health Statistics, NCHC), in the case of lack of national charts.**
- **Cole TJ, Bellizzi MC, Flegal KM, Dietz WH (2000) recommend international cut-off points for worldwide comparison of overweight and obesity:**
 - **for overweight - to use BMI chart defined to pass through BMI of 25,0 at the age 18 years,**
 - **for obesity - to use BMI chart defined to pass through BMI of 30,0 at the age 18 years.**
- **M. Roelants M, R. Hauspie (2004) recommends the same BMI charts constructed on a local standards of BMI.**



**Cole TJ et al (2000):
international
cut-off points for
overweight (BMI
passes 25 at the age
of 18 y.) and obesity
(BMI passes 30 at the
age of 18 y.)**

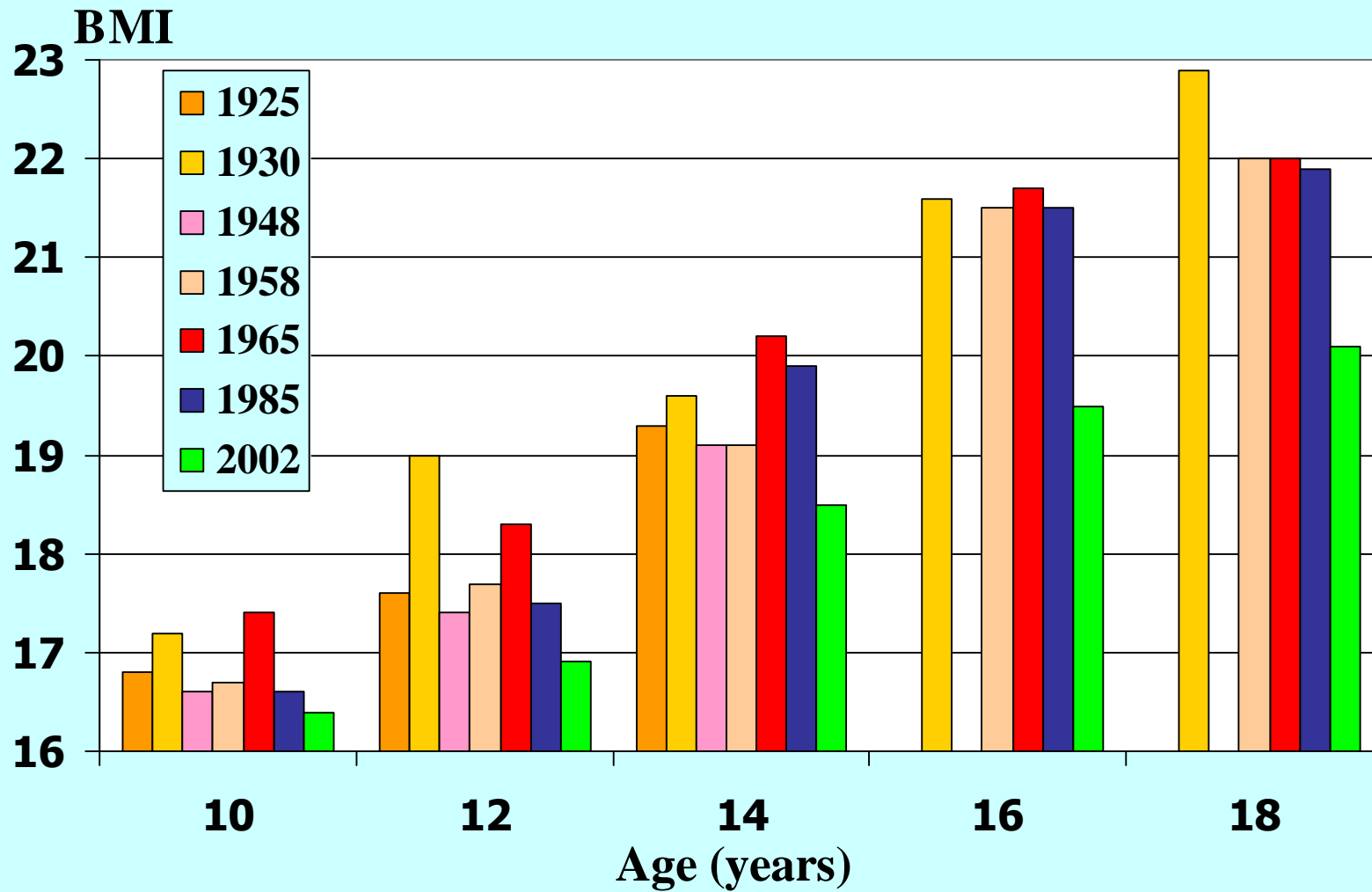
Age (years)	Body mass index 25 kg/m ²		Body mass index 30 kg/m ²	
	Males	Females	Males	Females
2	18.41	18.02	20.09	19.81
2.5	18.13	17.76	19.80	19.55
3	17.89	17.56	19.57	19.36
3.5	17.69	17.40	19.39	19.23
4	17.55	17.28	19.29	19.15
4.5	17.47	17.19	19.26	19.12
5	17.42	17.15	19.30	19.17
5.5	17.45	17.20	19.47	19.34
6	17.55	17.34	19.78	19.65
6.5	17.71	17.53	20.23	20.08
7	17.92	17.75	20.63	20.51
7.5	18.16	18.03	21.09	21.01
8	18.44	18.35	21.60	21.57
8.5	18.76	18.69	22.17	22.18
9	19.10	19.07	22.77	22.81
9.5	19.46	19.45	23.39	23.46
10	19.84	19.86	24.00	24.11
10.5	20.20	20.29	24.57	24.77
11	20.55	20.74	25.10	25.42
11.5	20.89	21.20	25.58	26.05
12	21.22	21.68	26.02	26.67
12.5	21.56	22.14	26.43	27.24
13	21.91	22.58	26.84	27.76
13.5	22.27	22.98	27.25	28.20
14	22.62	23.34	27.63	28.57
14.5	22.96	23.66	27.98	28.87
15	23.29	23.94	28.30	29.11
15.5	23.60	24.17	28.60	29.29
16	23.90	24.37	28.88	29.43
16.5	24.19	24.54	29.14	29.56
17	24.46	24.70	29.41	29.69
17.5	24.73	24.85	29.70	29.84
18	25	25	30	30



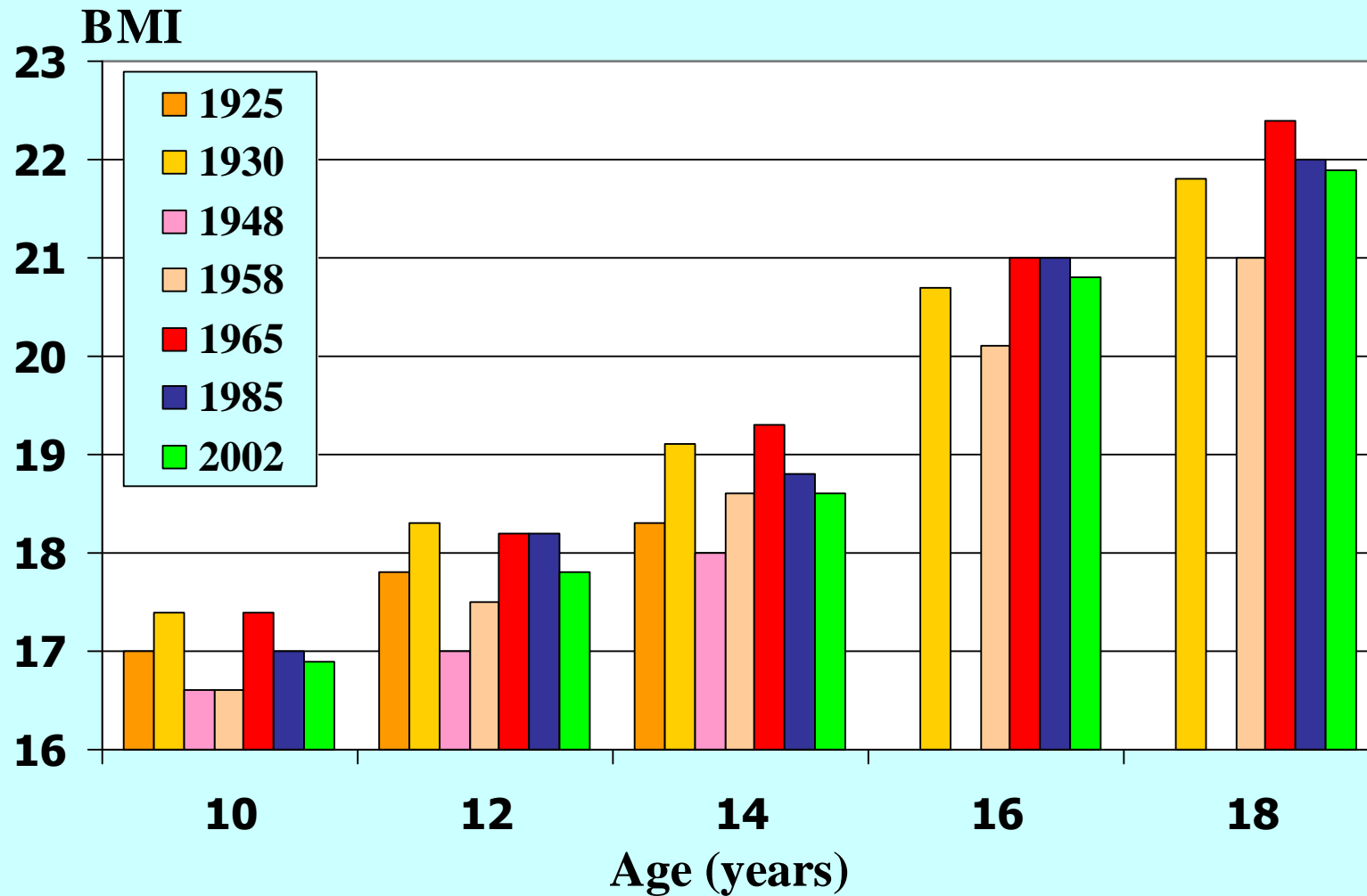
Material and methods

- Several growth studies were carried out in 5 biggest towns of Lithuania (Vilnius, Kaunas, Klaipeda, Panevezys, Siauliai) and surrounding: > 9000 adolescents (10-20 y. old) and > 500 young adults (20-40 y. old) were investigated in 2001-2005.
- **Anthropometry** was performed according to standard methods of Martin-Saller (1957).
- **Prevalence of overweight and obesity among adolescents** was estimated using two methods of *cut-off points*: CDC charts (BMI 85P and 95P) and international cut-off points for overweight and obesity (T.Cole, 2000).
- Perception of body size and different body parts among young people (both females and males) from different social starta was accessed according to questionnaire developed together with psychologists.

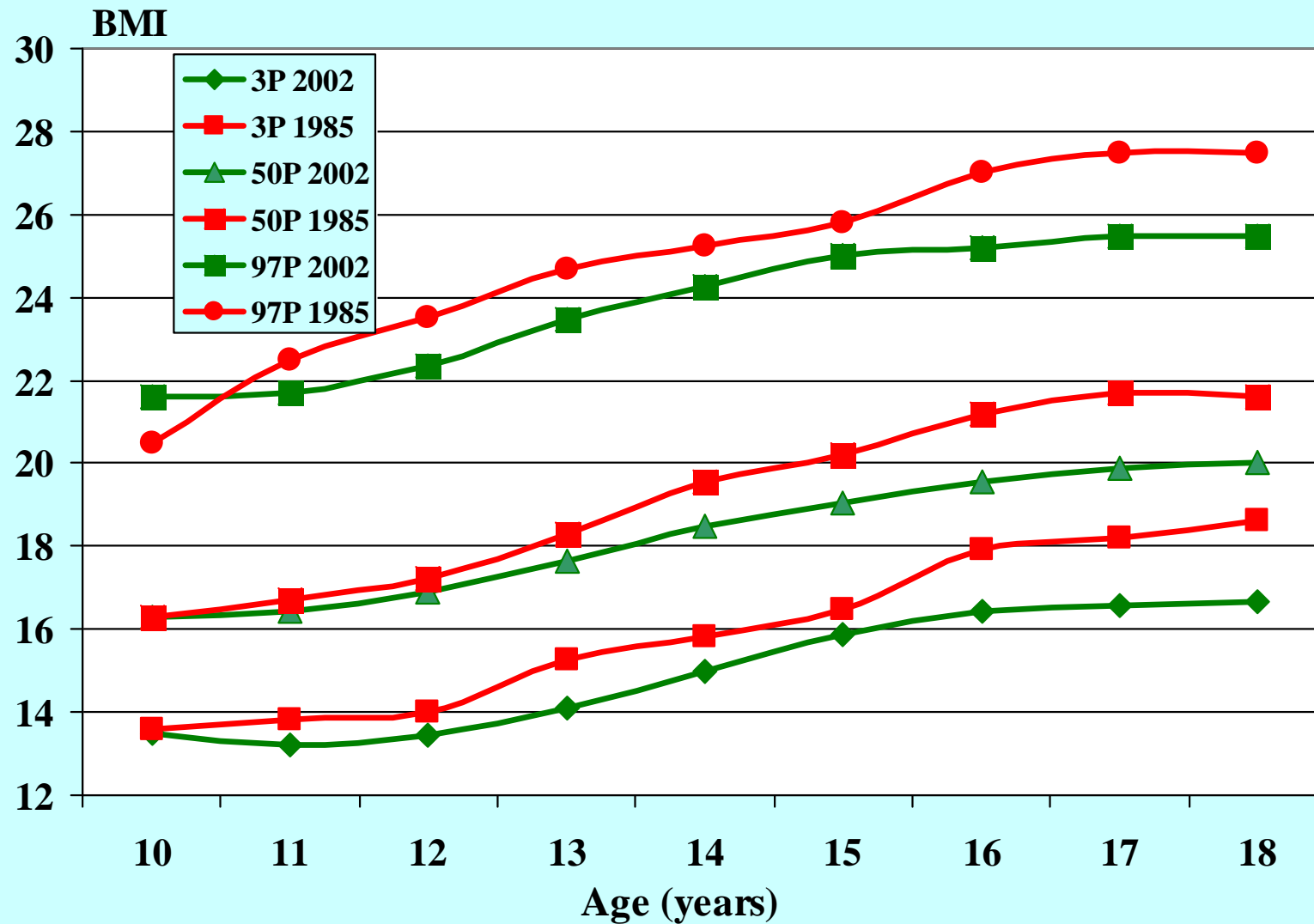
Secular trend of BMI of adolescent Lithuanian girls during the 1925-2002 y. period



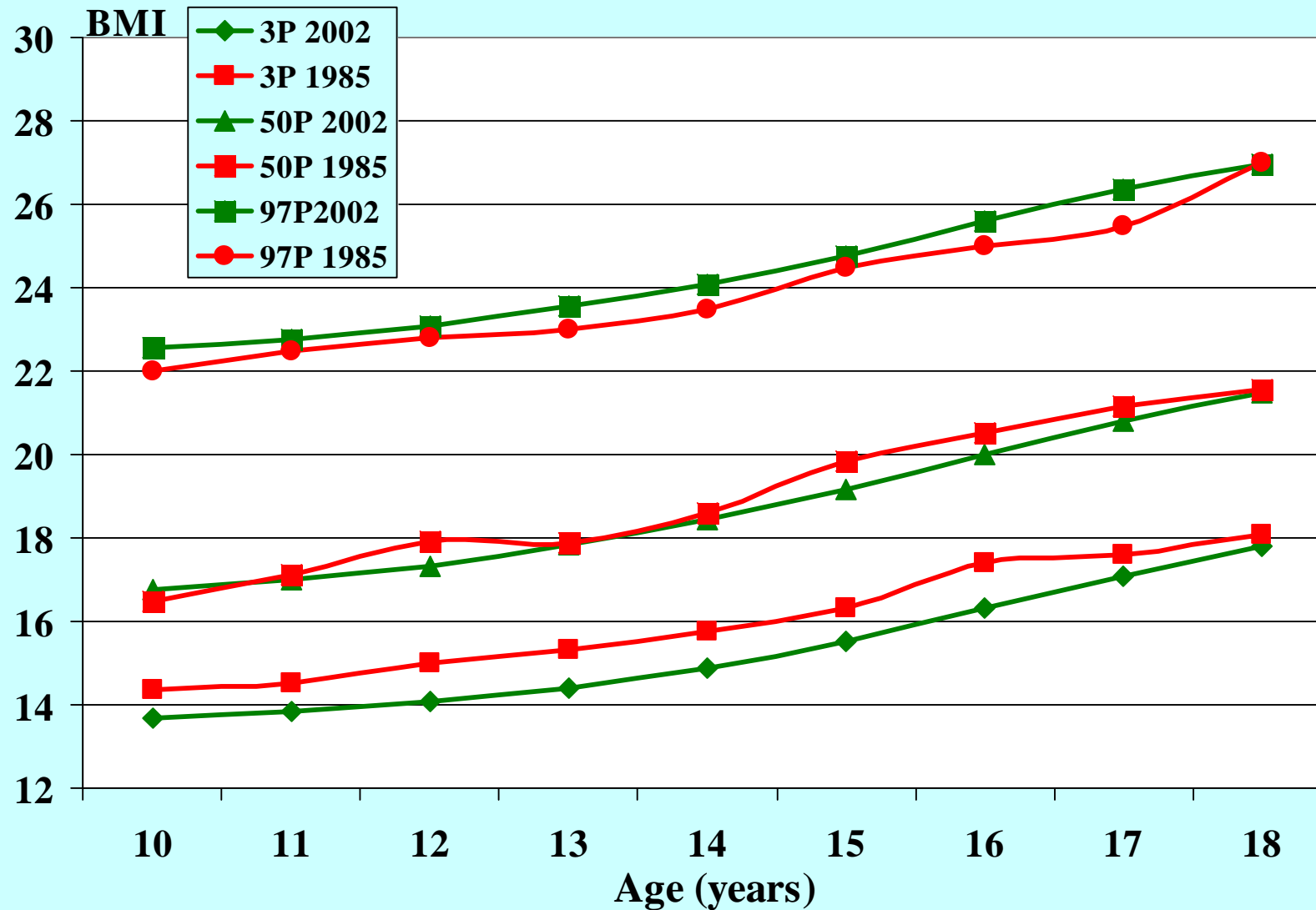
Secular trend of BMI of adolescent Lithuanian boys during the 1925-2002 y. period



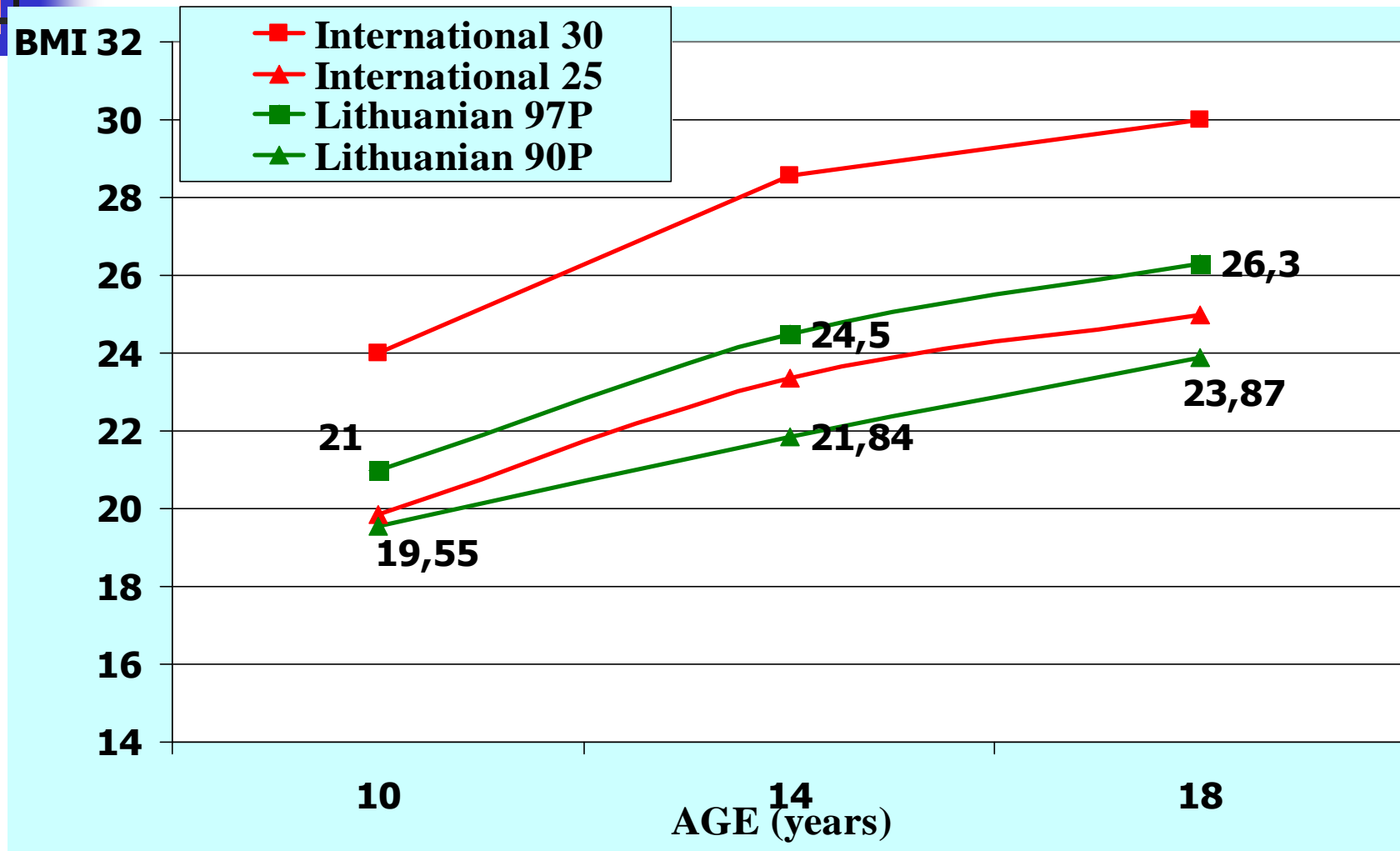
Changes of BMI of adolescent Lithuanian girls during the 1985-2002 y. period



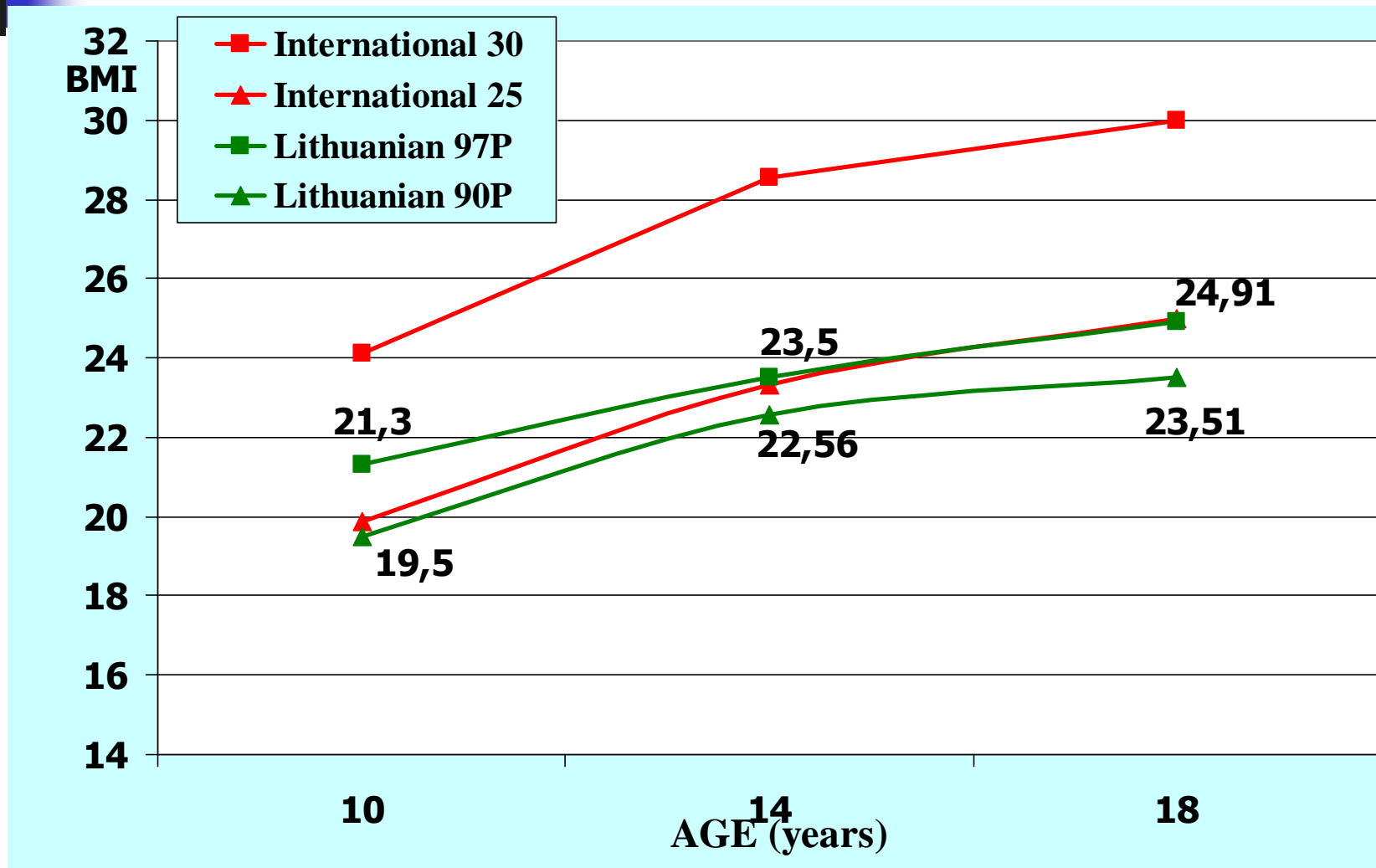
Changes of BMI of adolescent Lithuanian boys during the 1985-2002 y. period

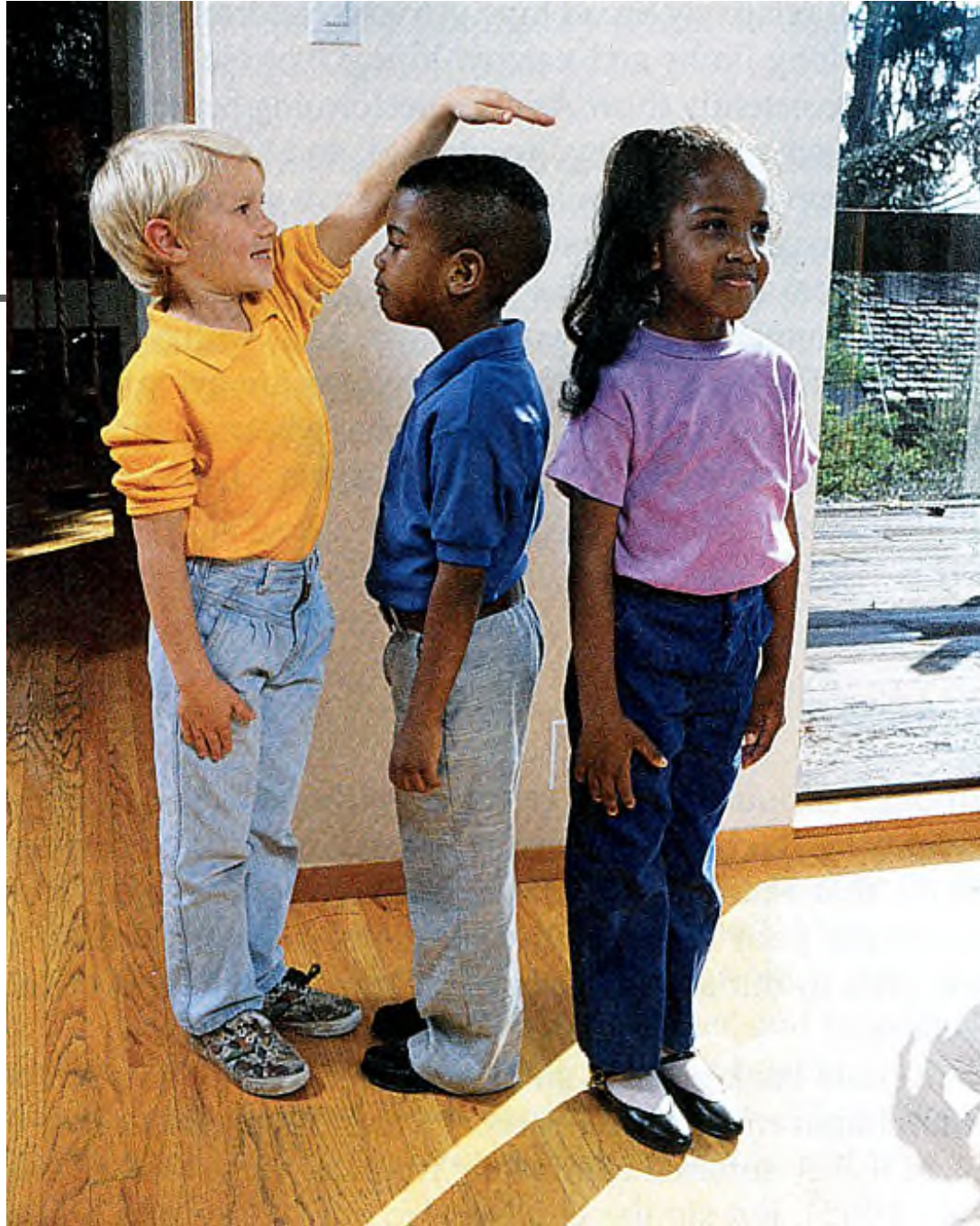
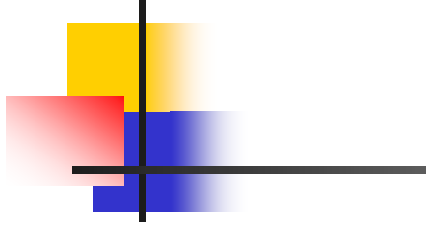


International *Cut-off points* for overweight and obesity (red lines) and BMI 90P, 97P of Lithuanian boys (green lines)



International *Cut-off points* for overweight and obesity (red lines) and BMI 90P, 97P of Lithuanian girls (green lines)



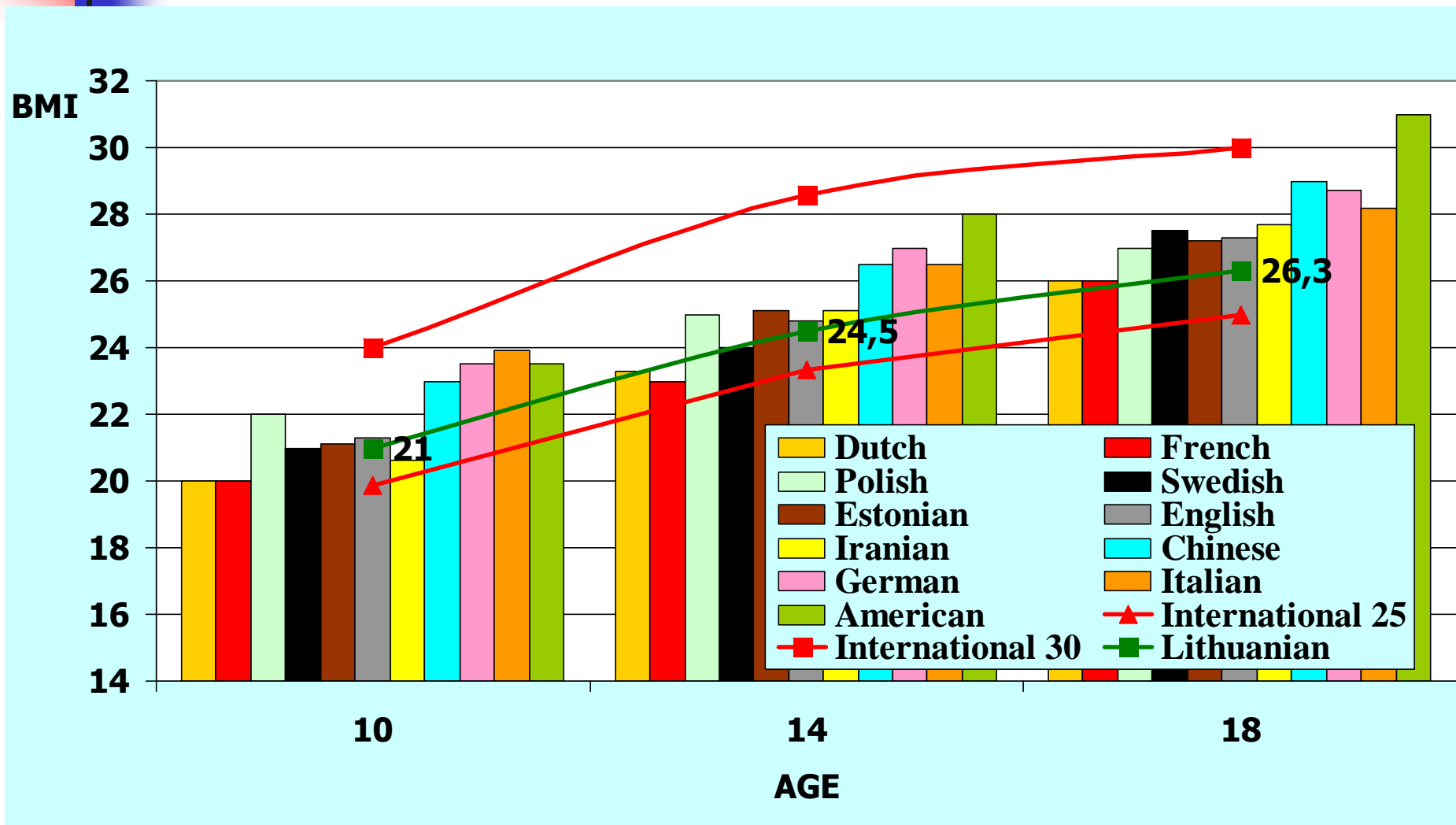




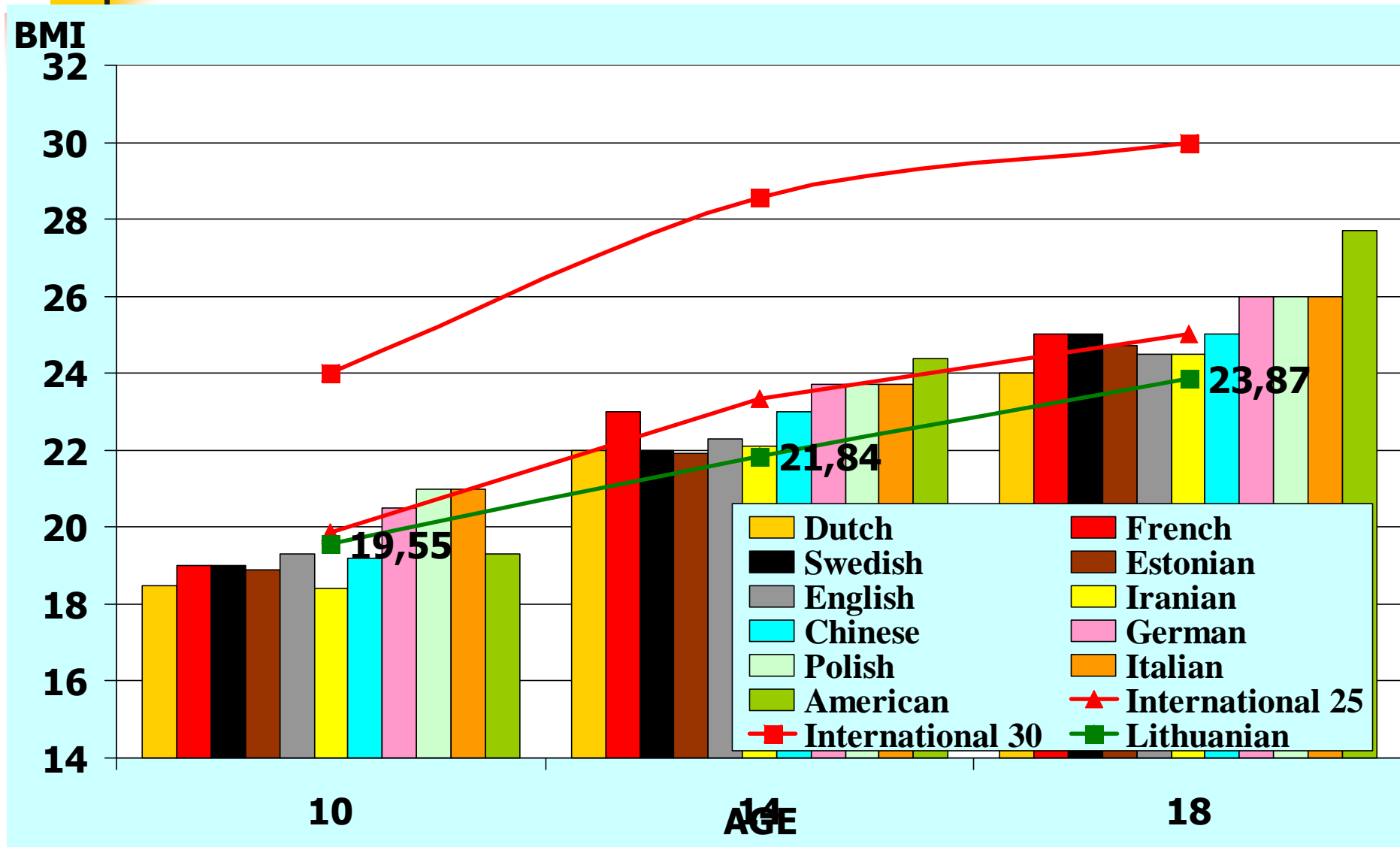
For comparison of BMI of Lithuanian children the following references were used:

- **US:** CDC growth charts (2000)
- **UK:** T.J.Cole, J.V.Freeman, M.A.Preece (1990)
- **France :** M.F.Rolland-Cachera, T.J.Cole, M.Sempe et al. (1991)
- **Sweeden:** G.Lindgren, A.Strandell, T.J.Cole, M.Healy, J.M.Tanner (1995)
- **Italy:** A.Luciano, F.Bressan, G.Zoppi (1997)
- **China:** S.S.Leung, T.J.Cole, L.Y.Tse, J.T.F.Lau (1998)
- **The Netherland:** T.J.Cole, M.J. Roede (1999)
- **Germany:** Kromeyer-Hauschild K, Wabitsch M, Kunze D et al. (2001)
- **Belgium (Flanders):** M.Roelants M, R.Hauspie (2004)

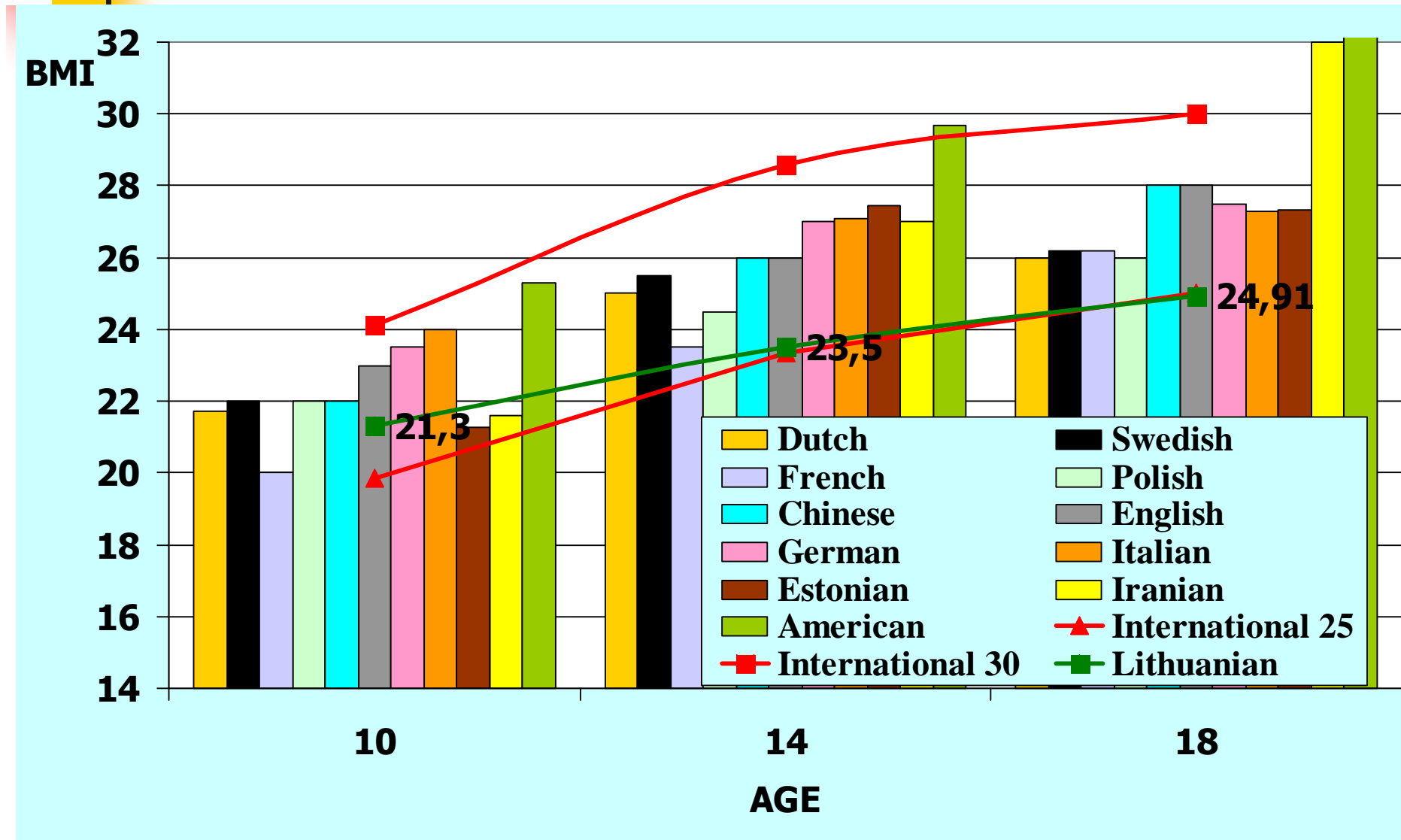
International *Cut-off points* for overweight and obesity (red lines) and 97P of BMI of boys from different countries (Lithuanian data presented as a green line)



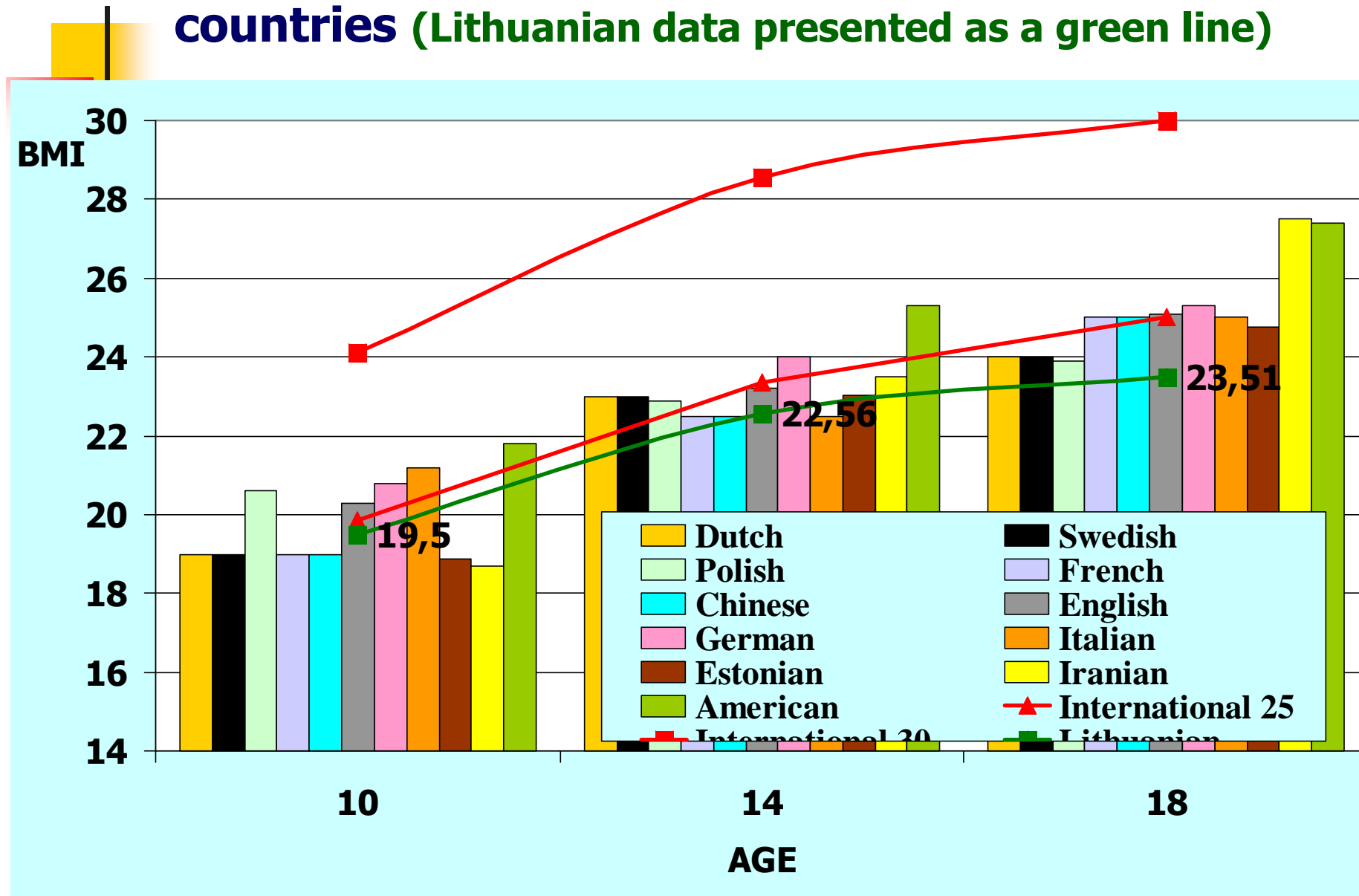
International *Cut-off points* for overweight and obesity (red lines) and 90P of BMI of boys from different countries (Lithuanian data presented as a green line)



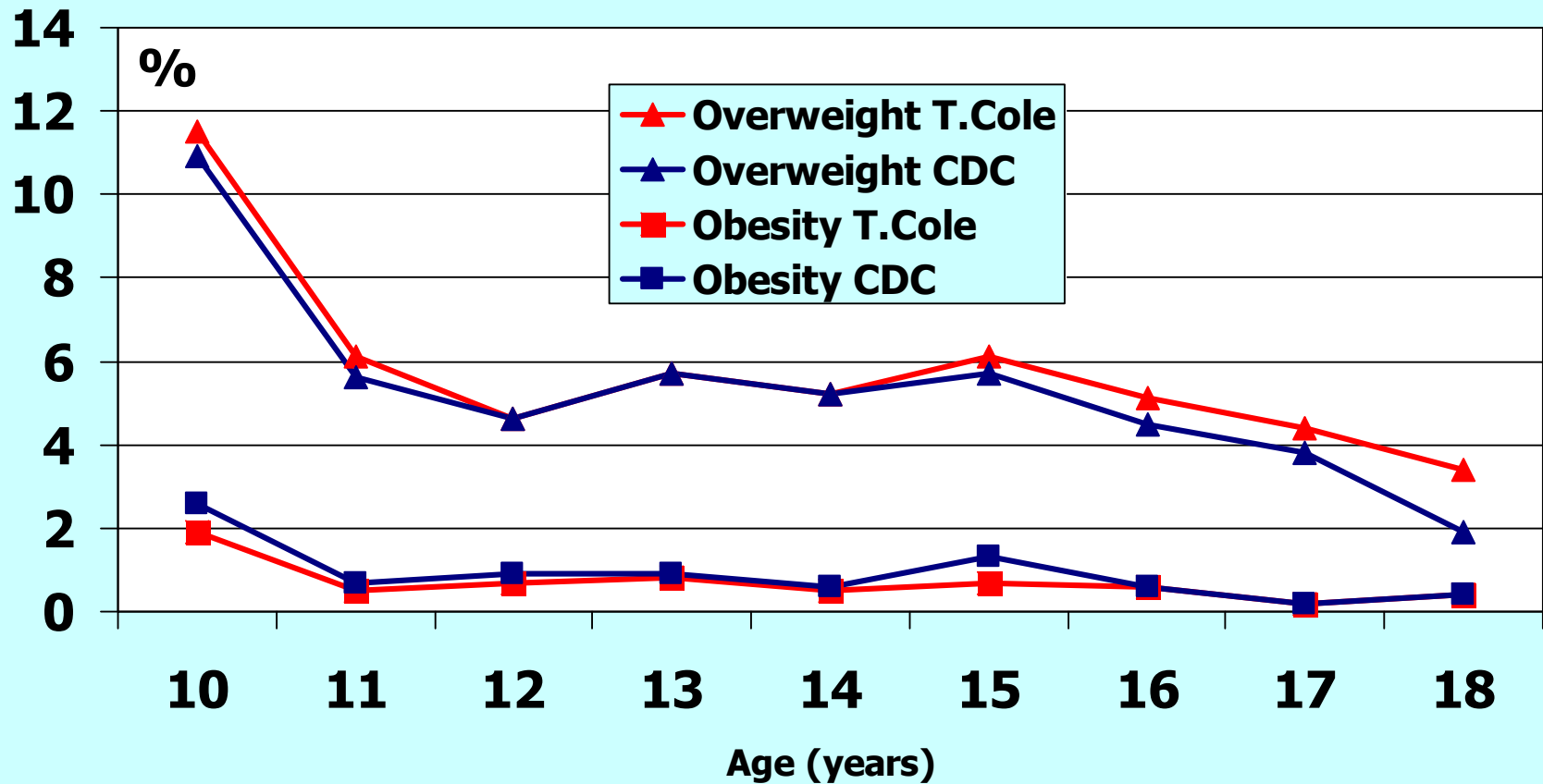
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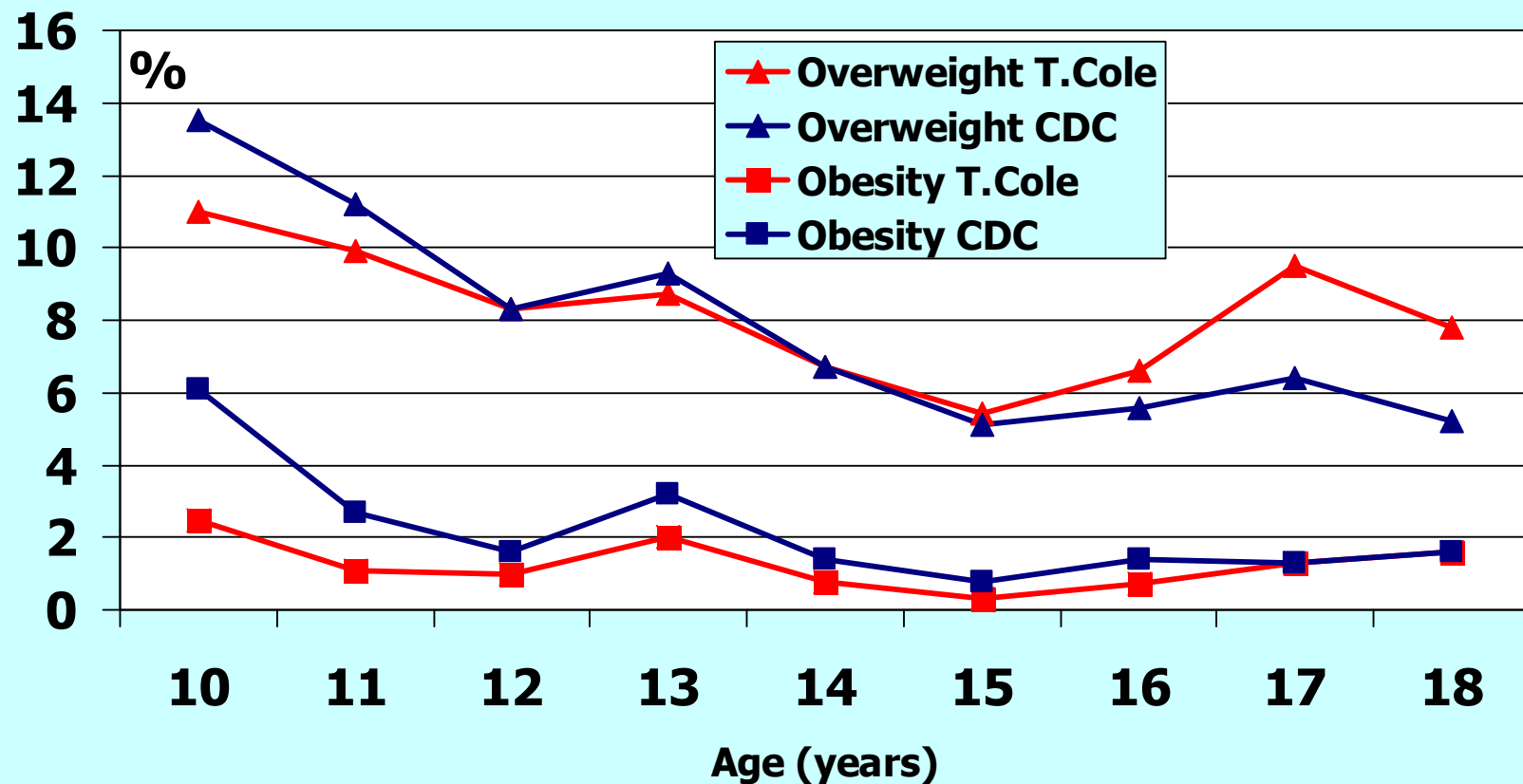
International *Cut-off points* for overweight and obesity (red lines) and 90P of BMI of girls from different countries (Lithuanian data presented as a green line)



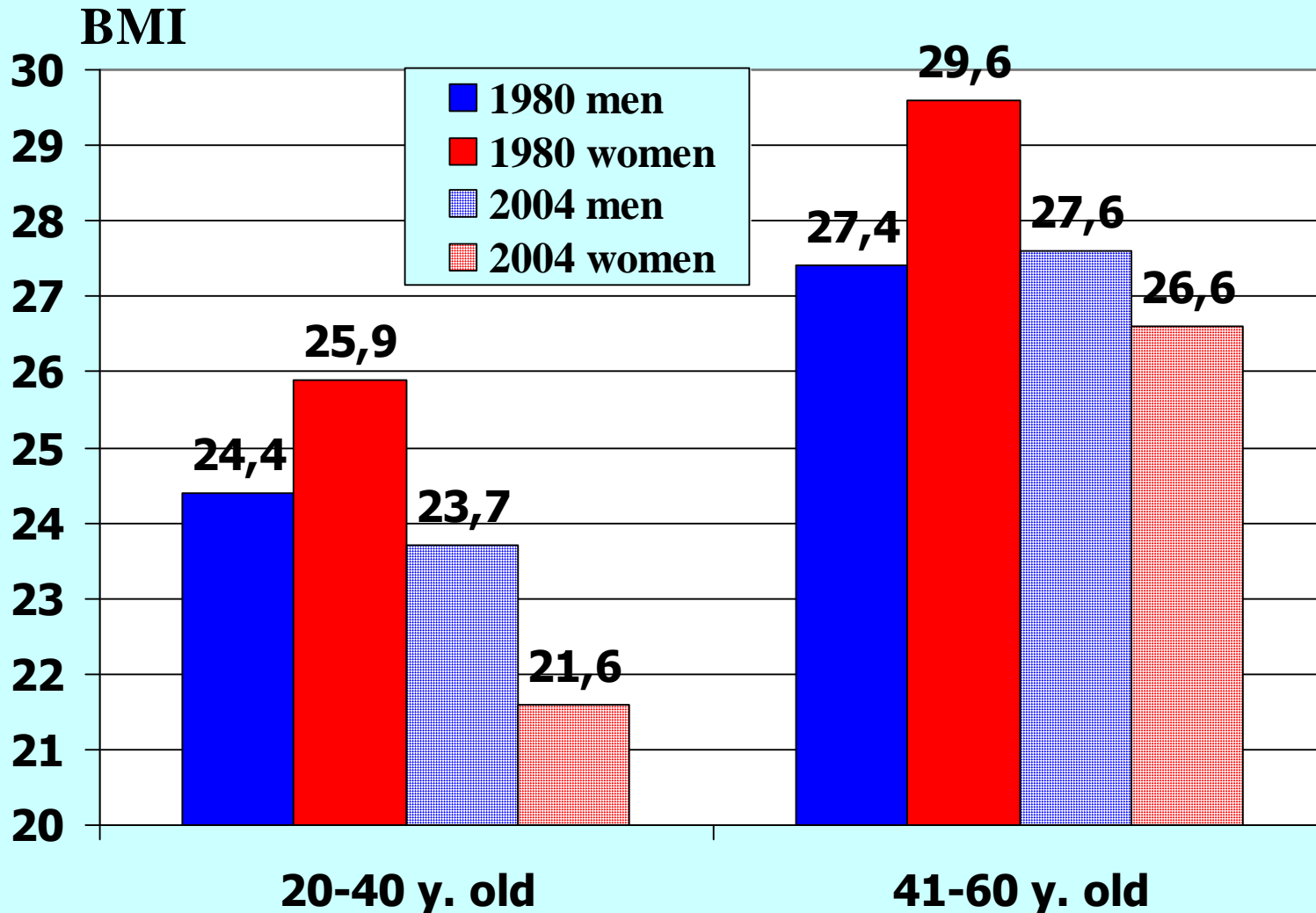
Prevalence of overweight and obesity among Lithuanian girls according to different *cut-off* points for screening



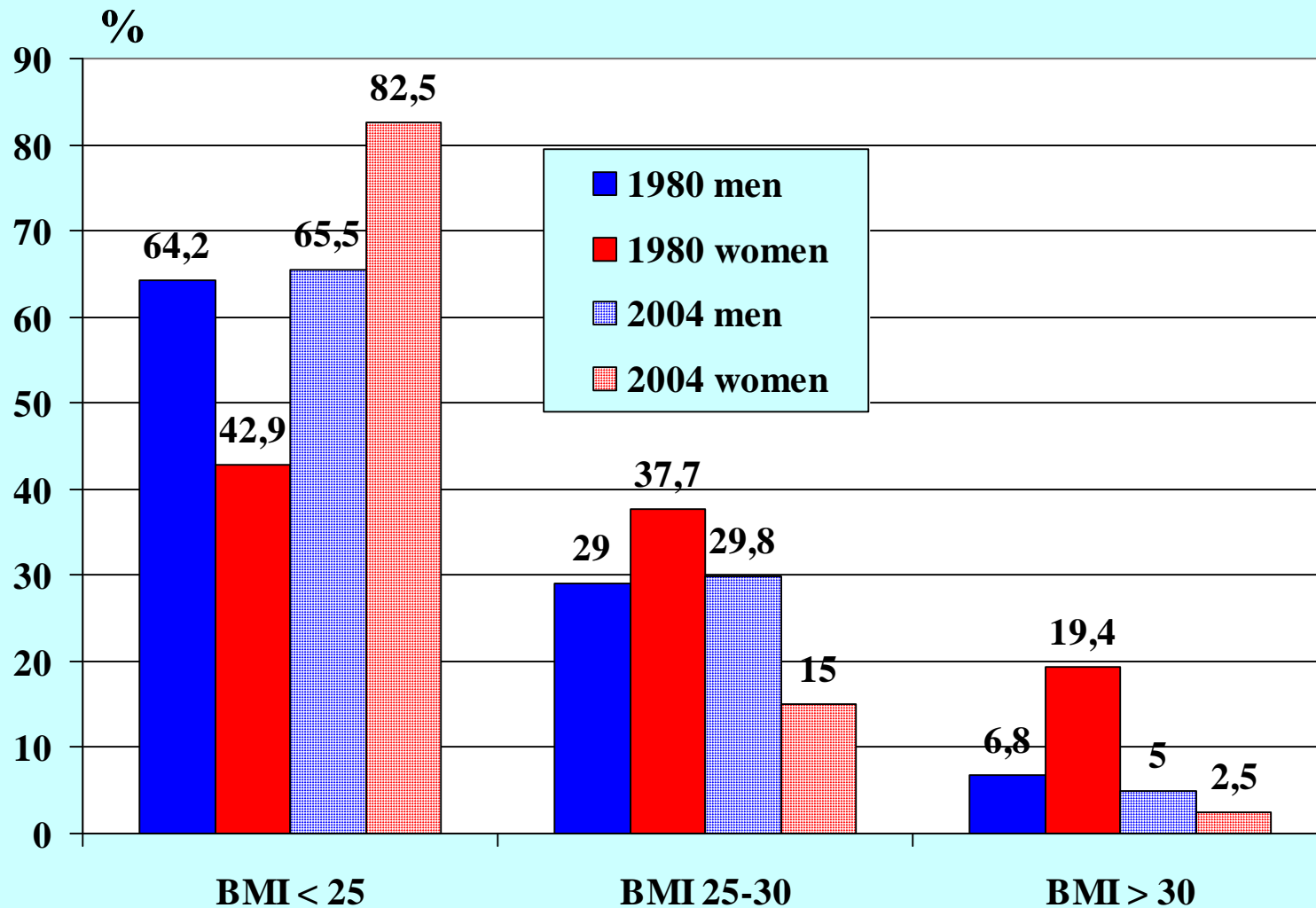
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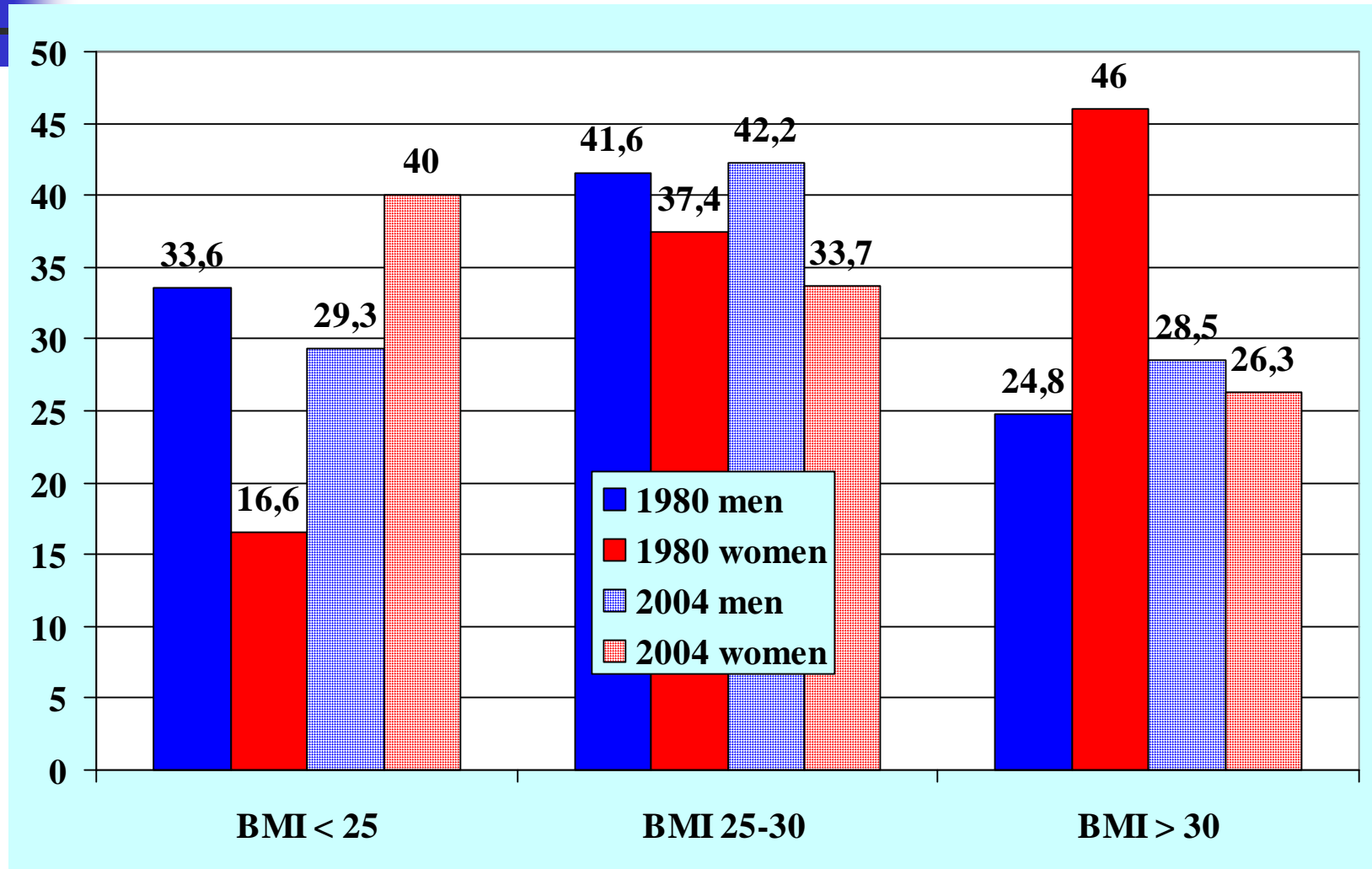
Changes of BMI of Lithuanian women and men during the 1980-2004 y. period



Changes in distribution (%) of BMI of 20-40 y. old Lithuanian women and men during 1980-2004 y.



Changes in distribution (%) of BMI of 41-60 y. old Lithuanian women and men during 1980-2004 y.

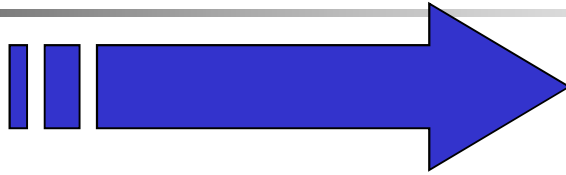




Conclusions

- During the last decades BMI of young Lithuanian females diminished more evidently in comparison with BMI changes of young Lithuanian males.
- The prevalence of obesity among young Lithuanian females is low – fluctuates between 0,2-2,5%, and depends on *cut-off points* for evaluation (males obesity is more often and compounds 1-6%).
- The differences in BMI trend and prevalence of obesity among young Lithuanians could be related rather to different body images in both sexes and stronger social pressure on women, more evident dissatisfaction with the body and wish to change it according to moden fashion.

Body image in young Lithuanians



???



Females Body Image during the last few decades



1960 y.
(Twiggy)

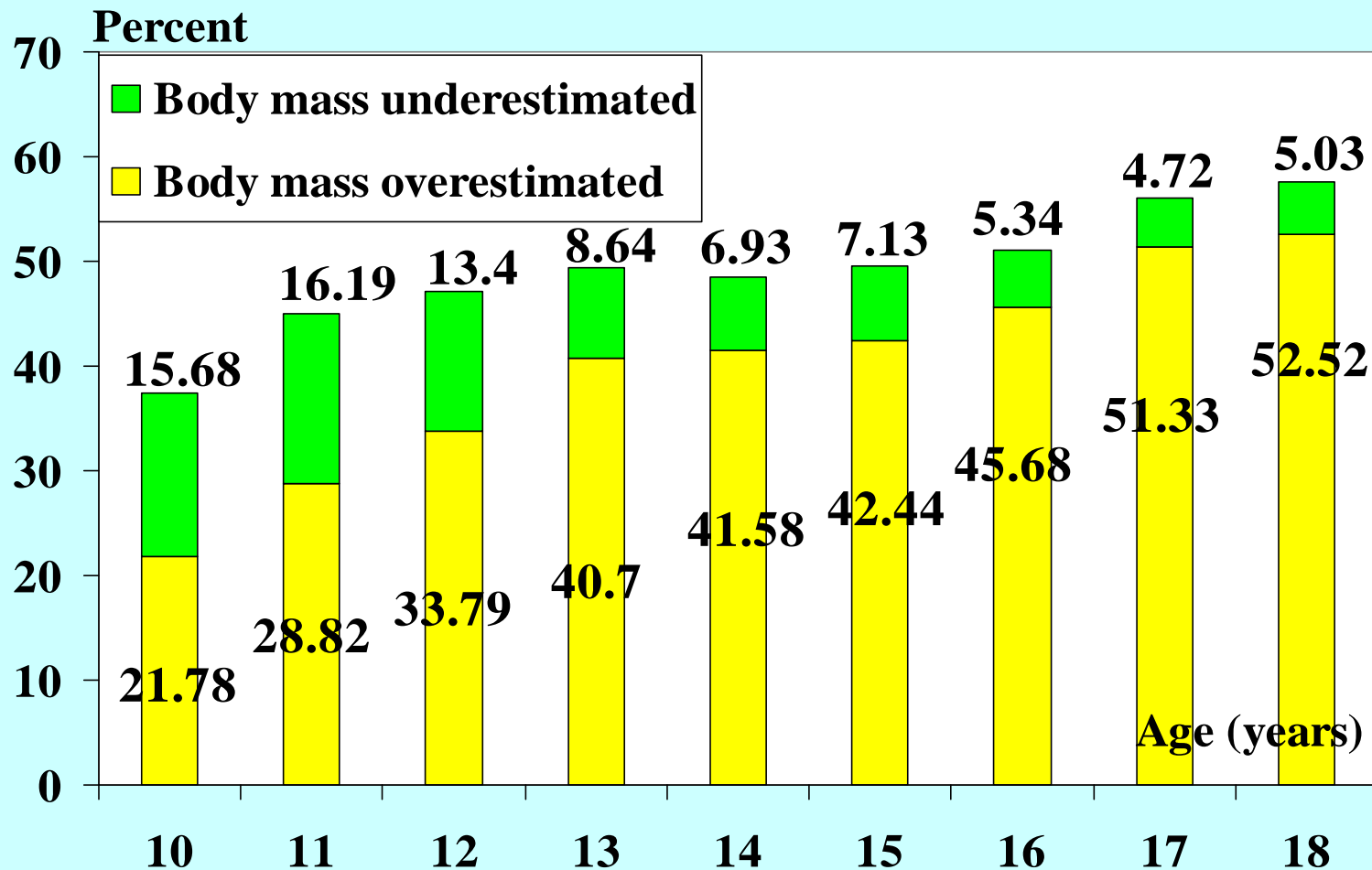
2000 y.
(modeling competition)



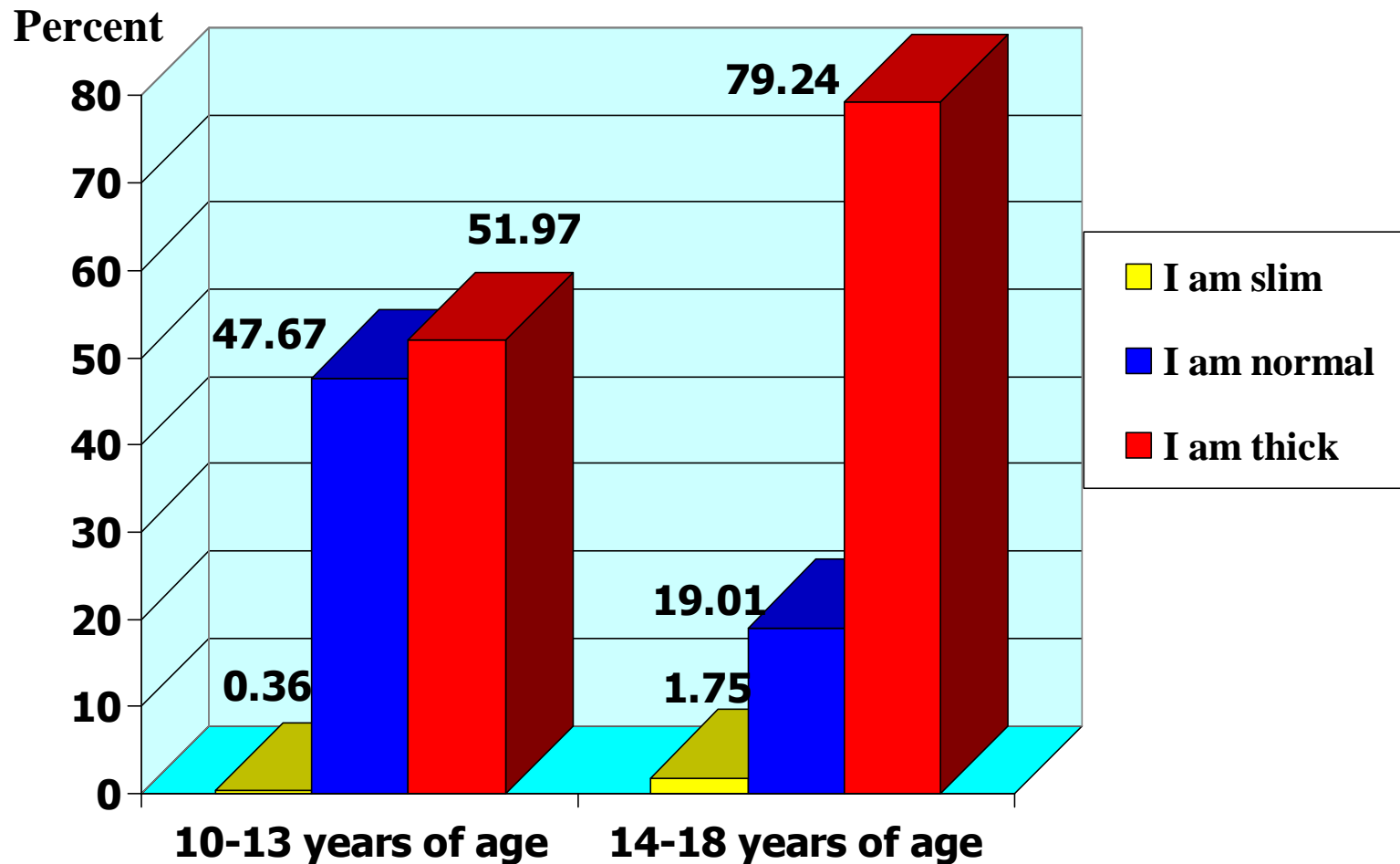
National Geographic, 2000 Jan: "The enigma of Beauty" by C.Newmann, photo by J.Cobb.



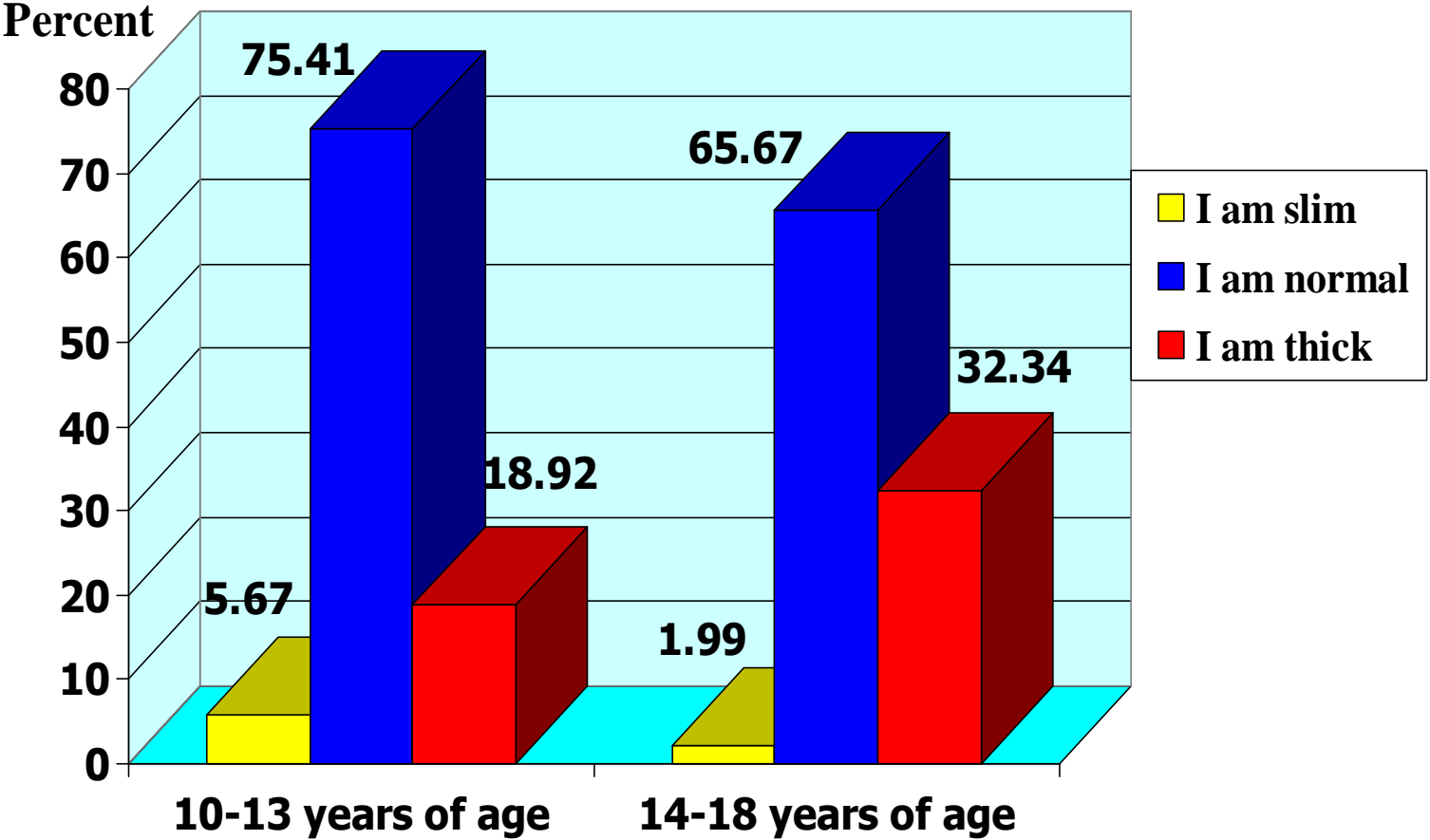
% of Lithuanian girls with incorrect Body Size Perception according to their actual BMI



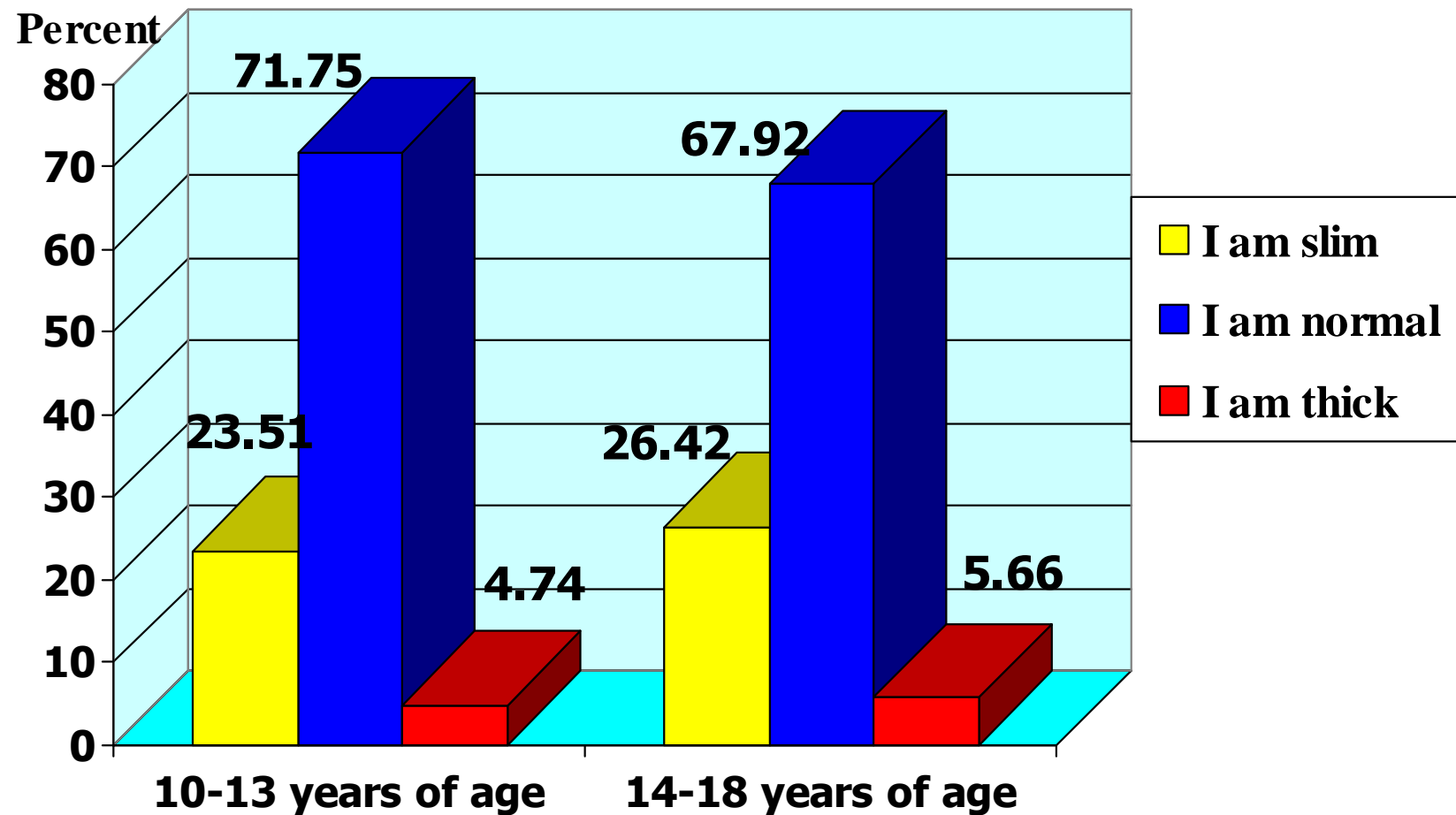
Perception of Body Size of girls with BMI > 75 percentile according to age



Perception of Body Size of girls with normal BMI according to age



Perception of Body Size of girls with BMI < 25 percentile according to age



Factors of Body Size Perception and Dissatisfaction of Lithuanian girls (% of girls under influence)

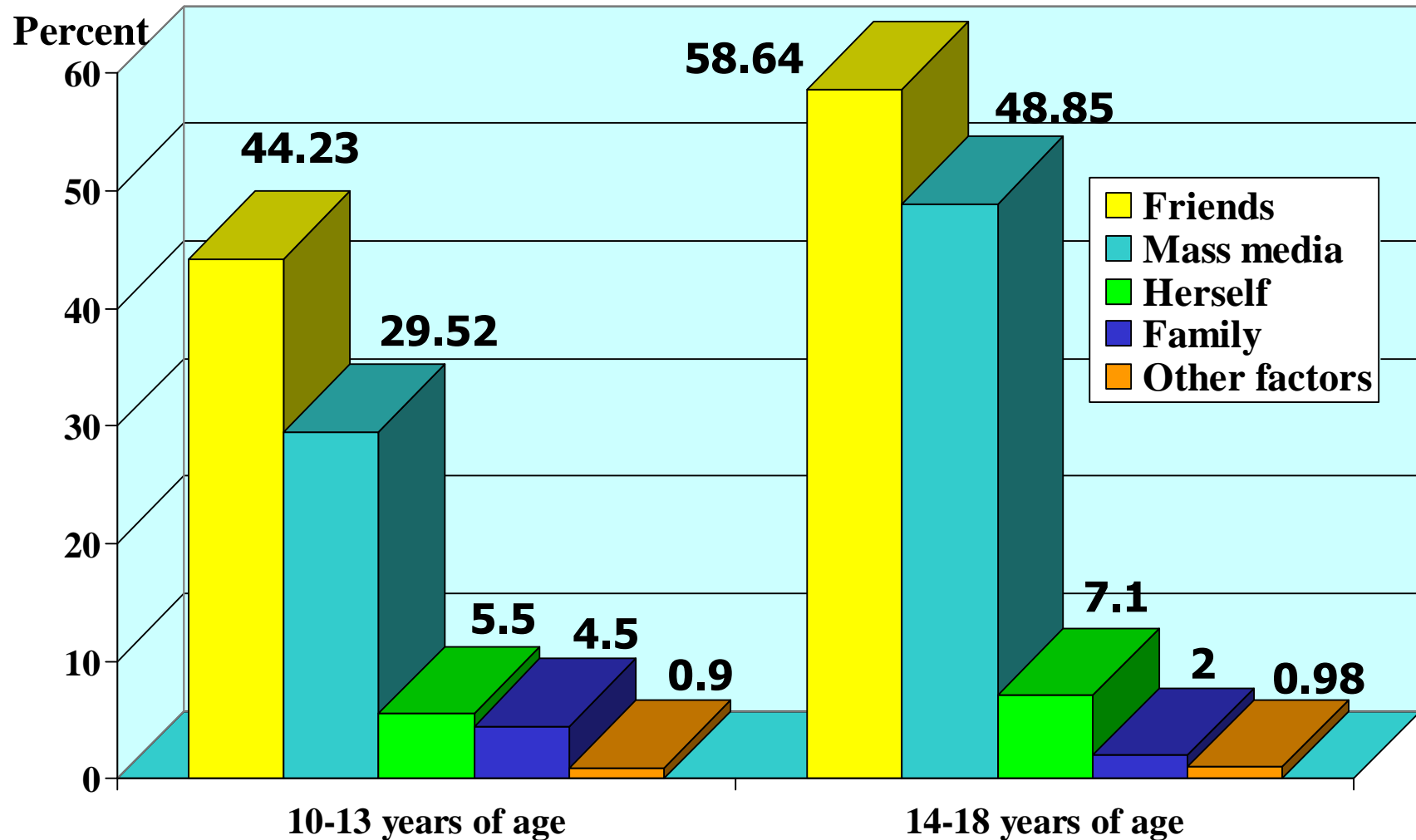




Photo illustration by Devin Miller and Jason Adams - Daily Frontline



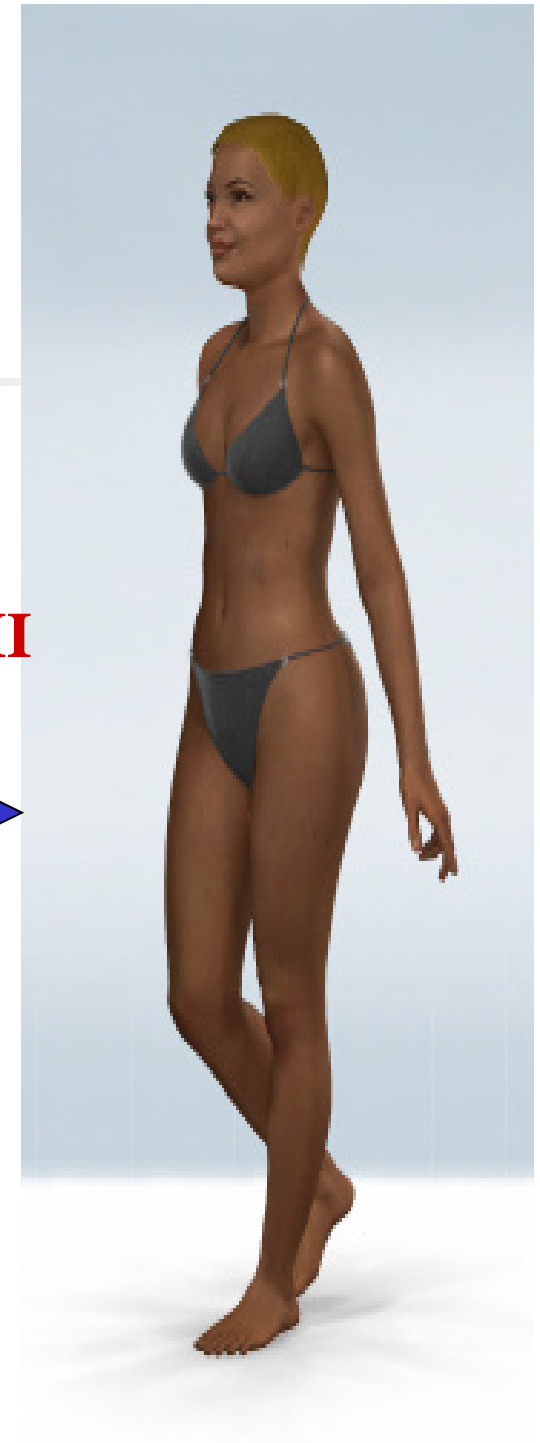
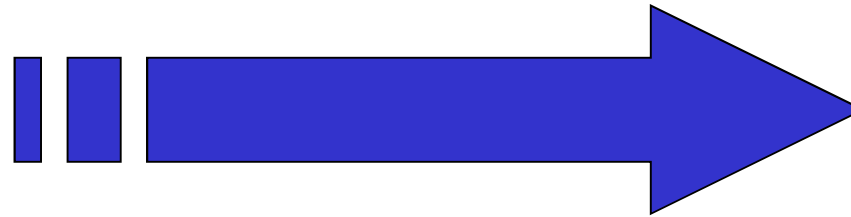
BMI of Lithuanian youngsters from different social strata

- **Study in 2004-2005**

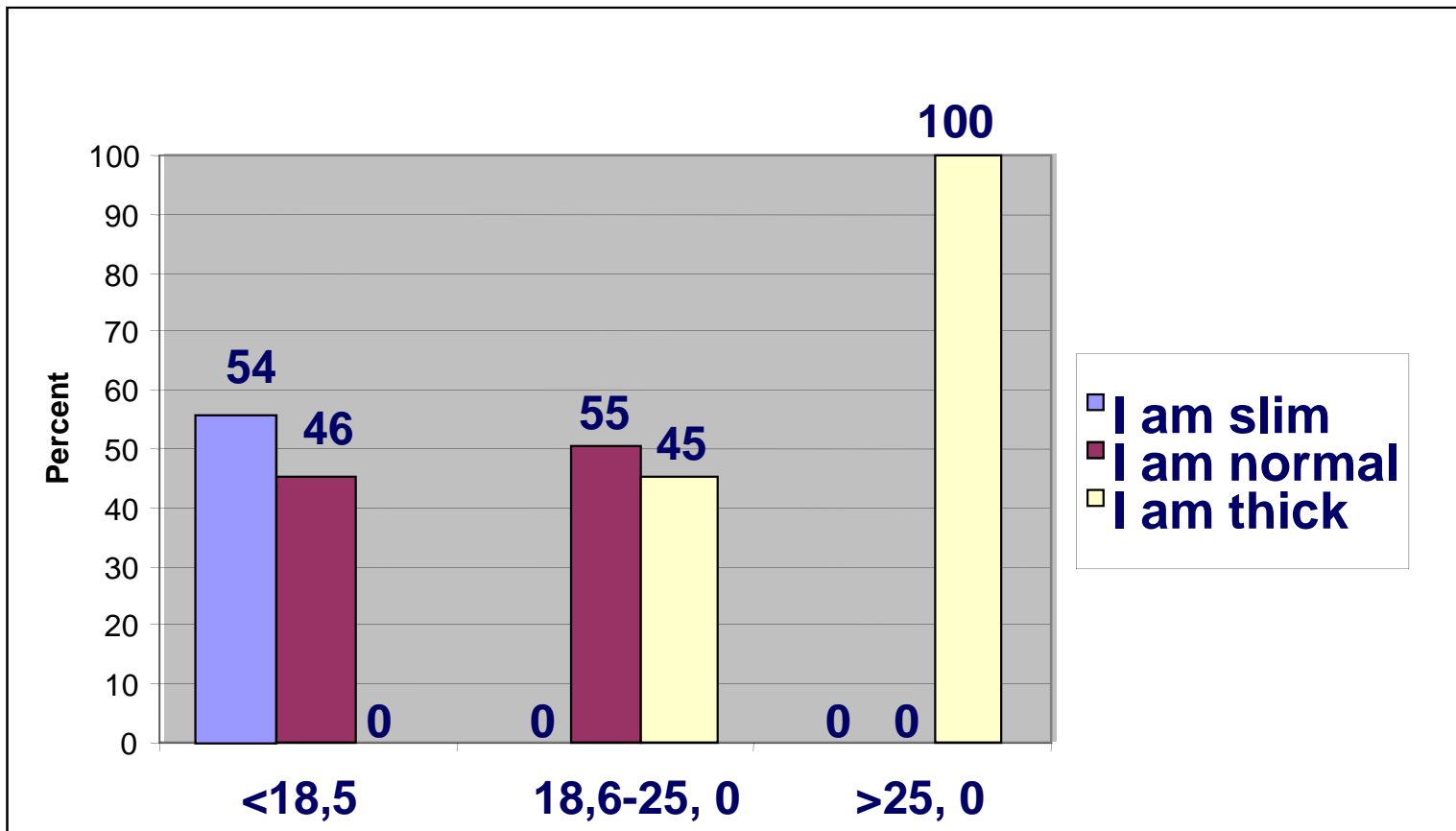
- **Body size and shape, body composition and proportions, also self-esteem of young Lithuanian females and males from Vilnius city were examined (data were collected by J.Tutkuvienė, G.Tomkute, M.Kurminas):**
 - **167 Medical students from Vilnius University (90 girls and 77 boys) of 19-20 years of age;**
 - **85 Students of Vilnius Vocational Training School (41 girls-tailors and 44 boys-machinists) of 19-20 years of age;**
 - **for comparison of sports activity and weight concerns – study on women from Vilnius leisure sports club was performed: 52 young 20-29 y.a.) women were examined according to wide program.**

Desirable BMI and Weight of Females:

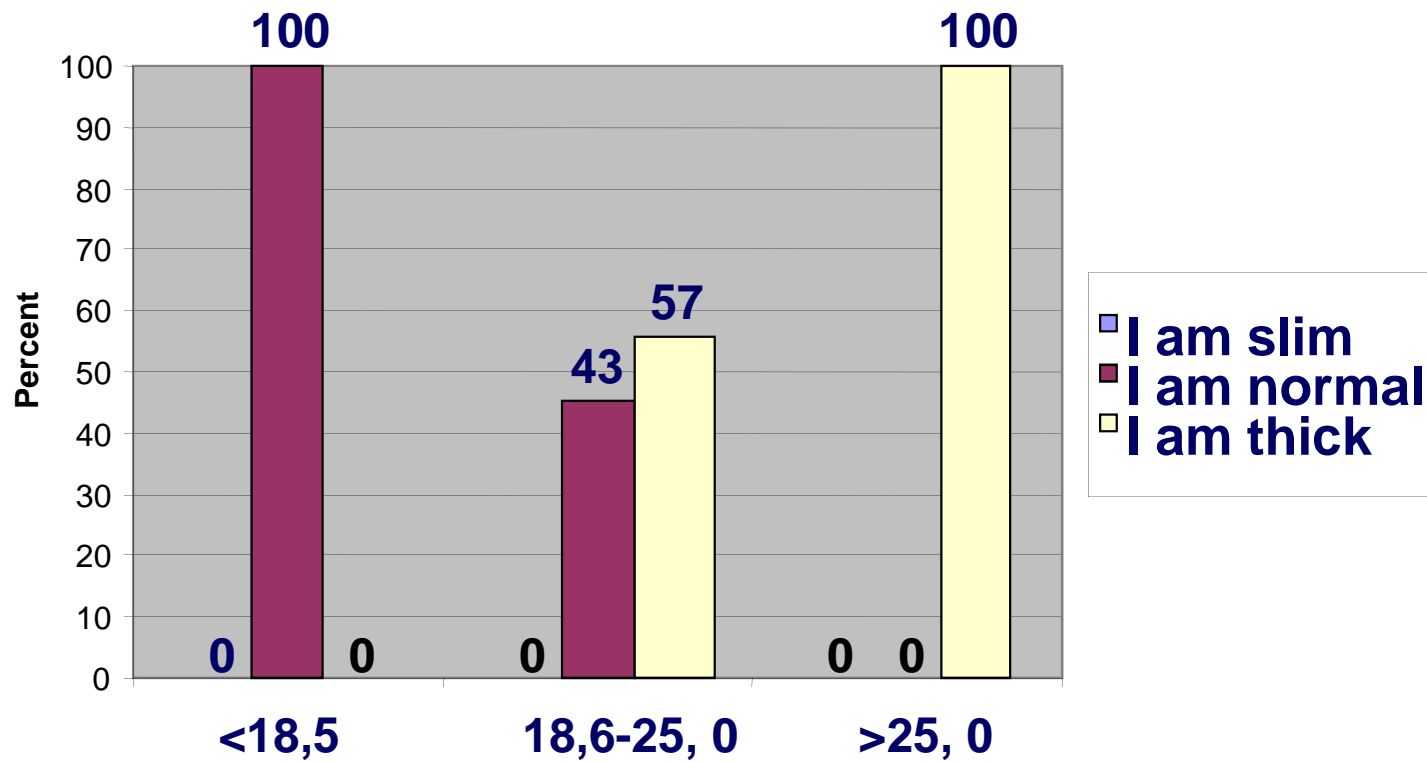
- **77,9 % Medical Students**
 - **42,8 % Vocational Training**
- Wish to have SMALLER BMI**



Perception of Body Size according to actual BMI of Lithuanian females / Medical Students



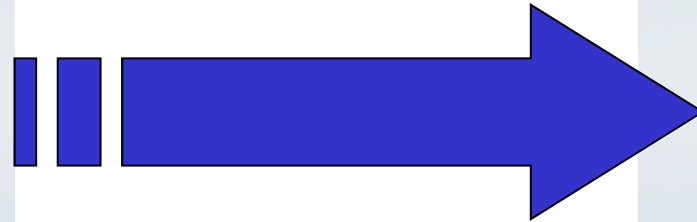
Perception of Body Size according to actual BMI of Lithuanian females / Vocational Training Students



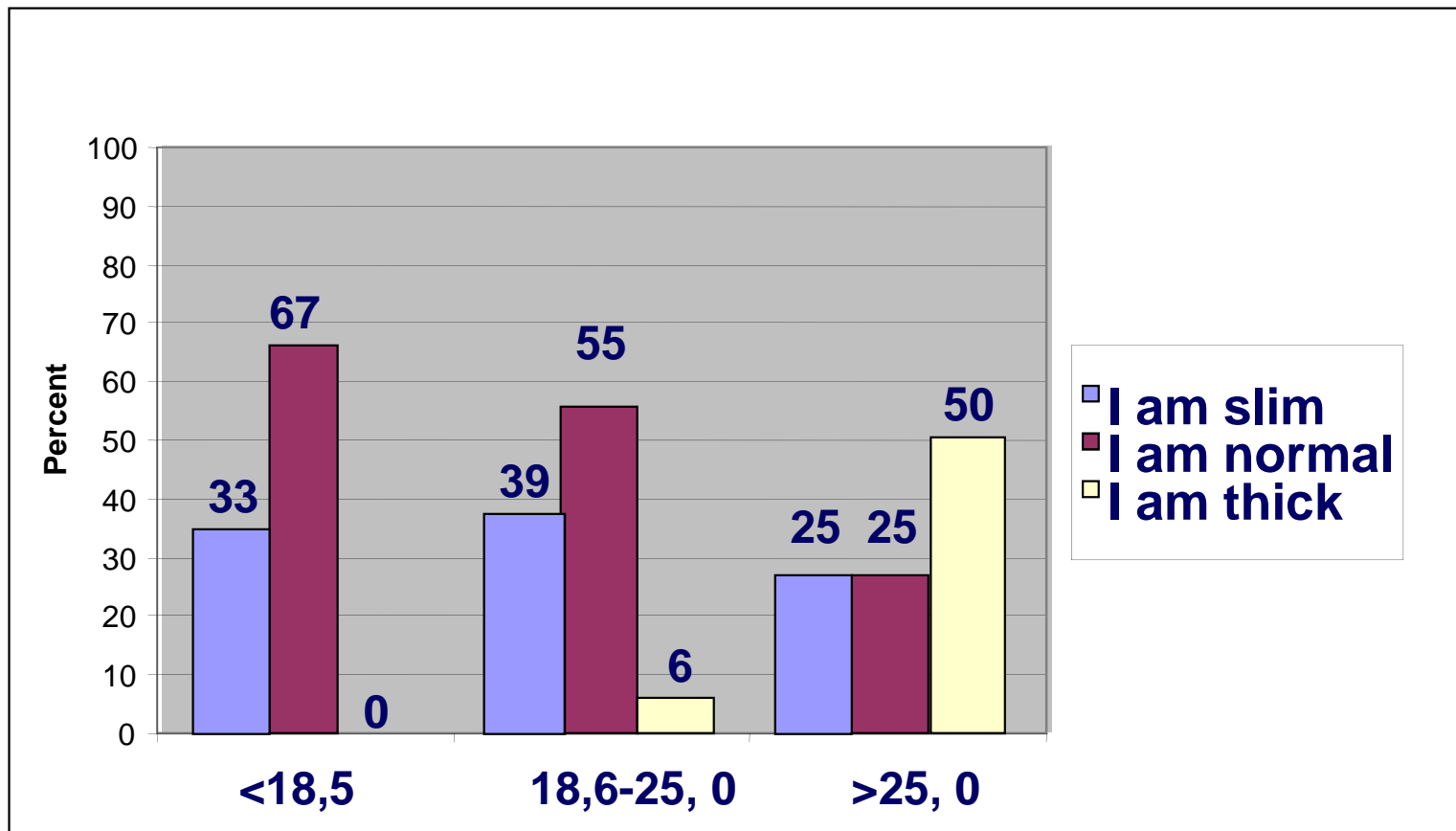
Desirable BMI and Weight of Males:

- 56,4% Medical Students
- 44,8% Vocational Training

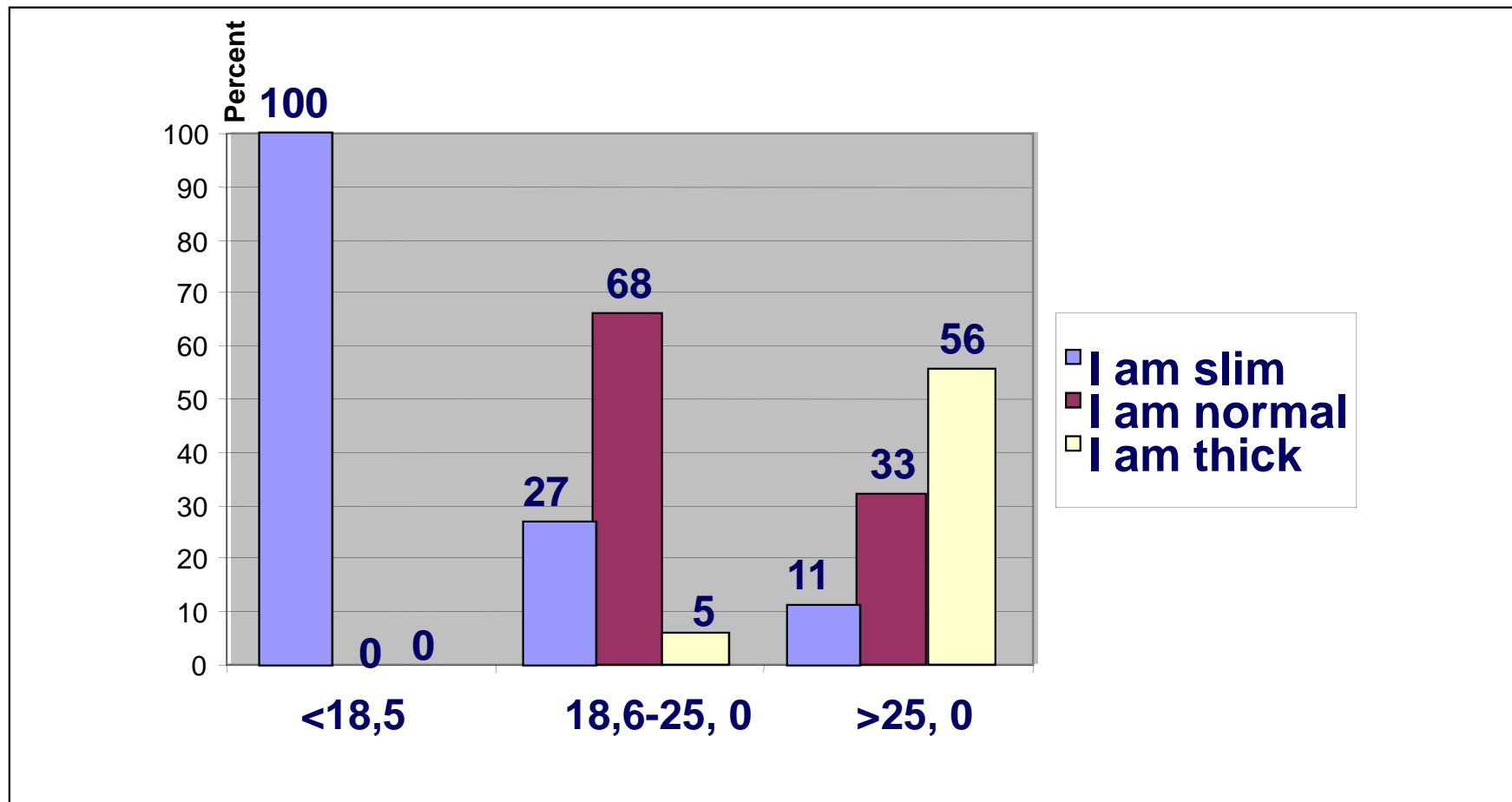
Wish to have BIGGER BMI



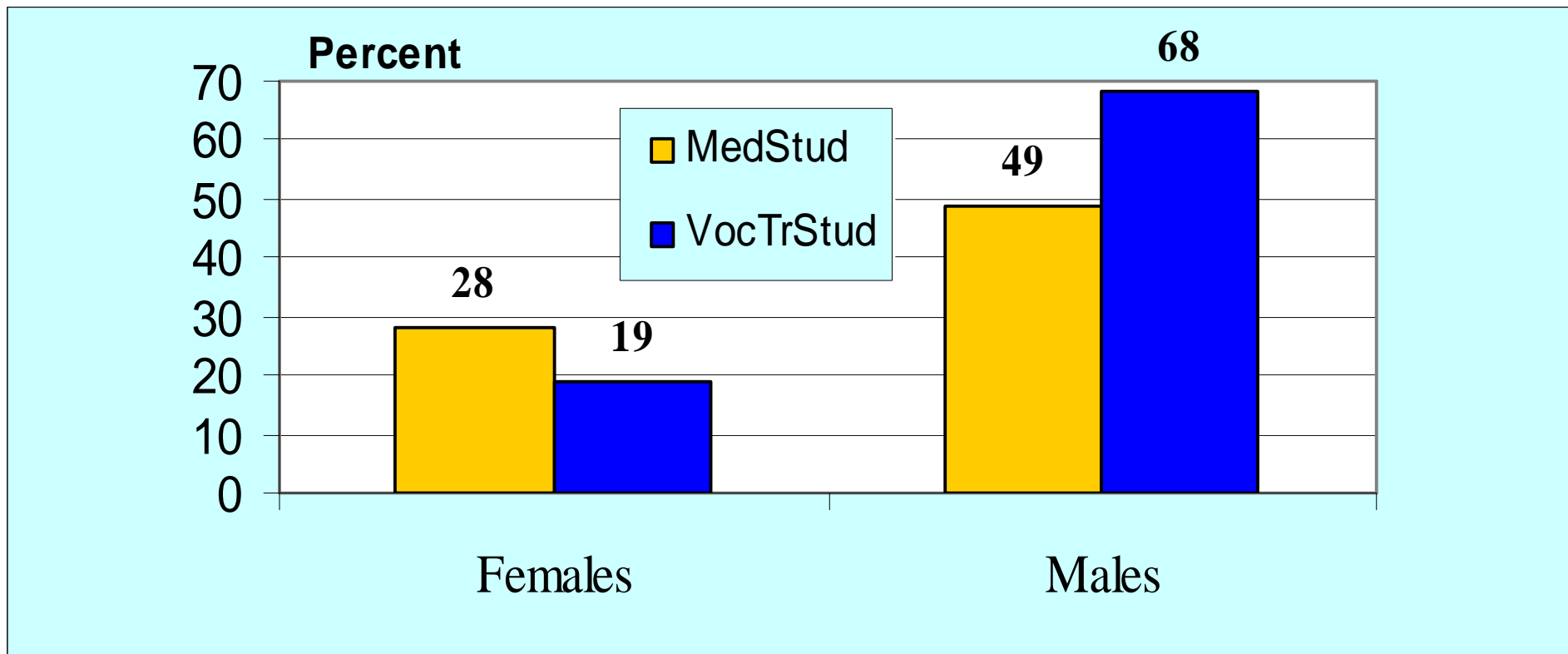
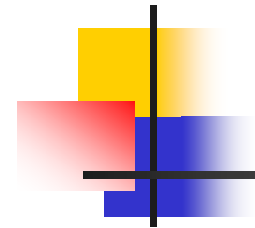
Perception of Body Size according to actual BMI of Lithuanian males / Medical Students



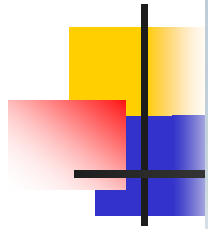
Perception of Body Size according to actual BMI of Lithuanian males / Vocational Training Students



Lithuanian youngsters with positive Perception of Body Shape



Mostly disliked body parts of females:



35,5% MedStud
47,6 % VocTrStud

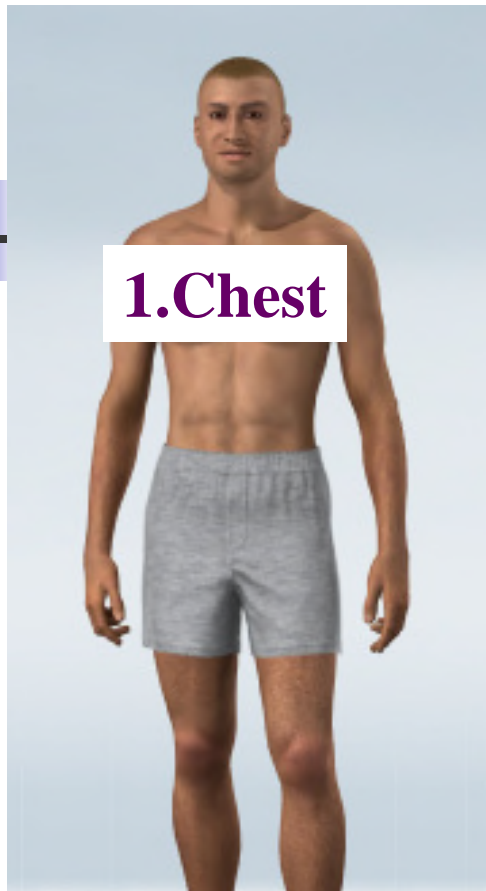
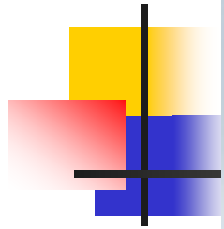


32,2 % MedStud
47,6 % VocTrStud



27,7 % MedStud
33 % VocTrStud

Mostly disliked body parts of males:



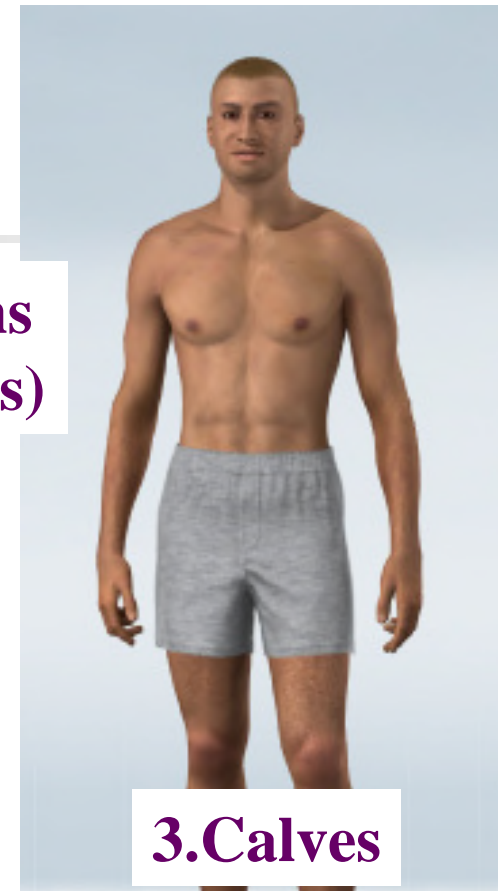
1.Chest

**15,5% MedStud
18,1% VocTrSt**



**2.Arms
(biceps)**

**14,2% MedStud
6,8% VocTrStud**

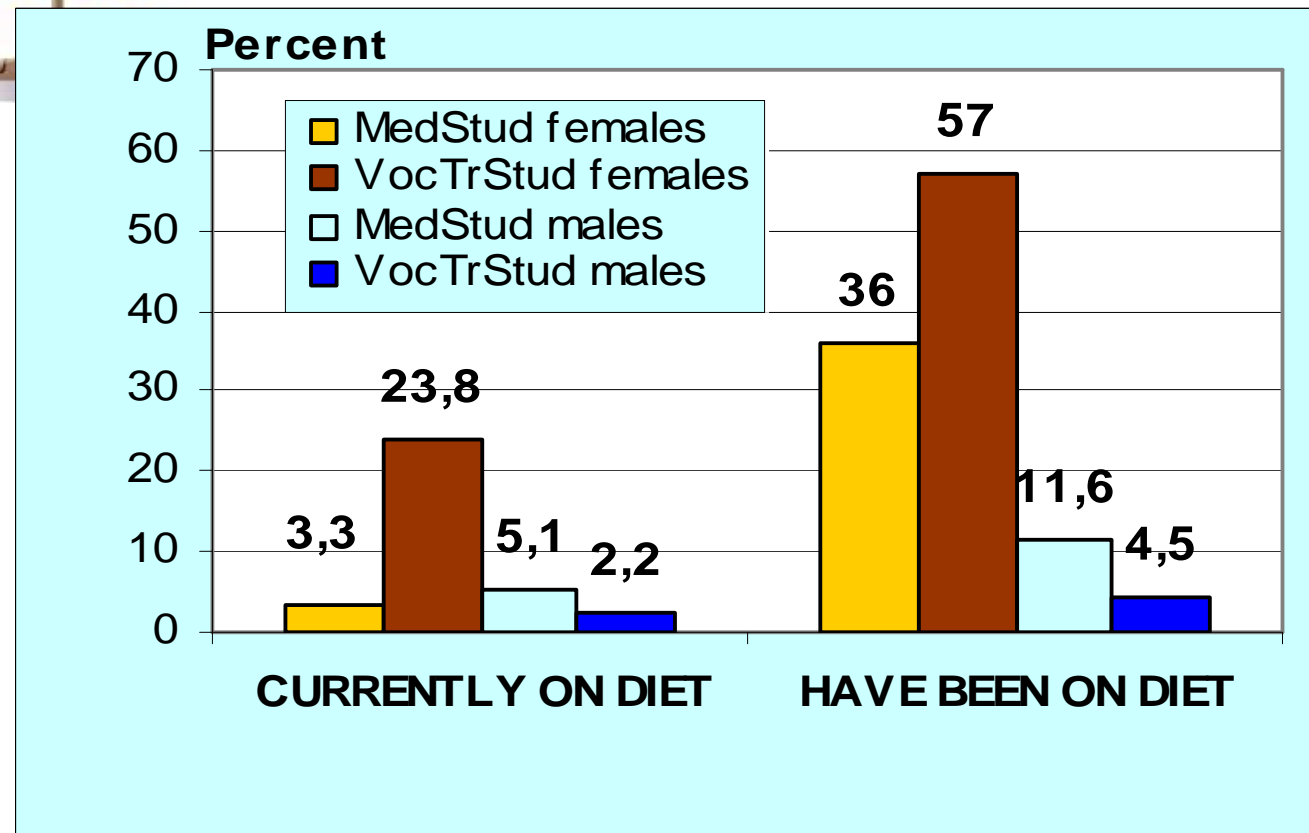


3.Calves

**14,0% MedStud
6,7% VocTrStud**



DiETING concerns among Lithuanian youngsters from different social strata:





Conclusions

- **During the last decades BMI of young Lithuanian females diminished more evidently in comparison with BMI changes of young Lithuanian males.**
- **BMI trend of Lithuanian adolescents and young males and females could be related with sexual differences in body image and stronger social pressure on women, more evident females dissatisfaction with body size and shape, and more strong wish among young women to change own body according to modern fashion.**

What about the future trends???

