

Alcohol consumption is related to abdominal obesity in adolescent boys, but not in girls, in the Greek population

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Data from 1st national epidemiological large scale survey on the prevalence of abdominal obesity in Greece

Introduction - 1

- The metabolic syndrome (syndrome X) is characterised by :
 - Abdominal obesity
 - Dyslipidemia
 - Hyperinsulinemia-glucose intolerance
 - Hypertension
- Waist-to-hip ratio (WHR) is considered more reliable than body mass index (BMI) in estimating abdominal obesity, which is considered as part of the metabolic syndrome.



Cut-off points of Waist-to-Hip ratio

<0.95: low risk

95-1.00: moderate risk

>1.00: increased risk

For men

<0.80: low risk

0.80-0.85: moderate risk

>0.85m: increased risk

For women

Introduction - 2

Chronic alcohol consumption has many adverse effects (all major organs can be affected: nervous system, cardiovascular system, liver, GI system, pancreas, hematopoietic system, endocrine system)

- Moderate drinking may have some health benefits (reducing the risk of cardiovascular disease – “the French paradox”)



Aim

- **To explore a potential relation of alcohol consumption to abdominal obesity in adolescents in Greece.**



Subjects

The present study is part of the **first national epidemiological large scale survey on the prevalence of obesity in Greece**, conducted by the Hellenic Medical Association for Obesity (HMAO).



Hellenic Medical Association for Obesity (HMAO)

1st National Epidemiological Large Scale Survey on the Prevalence of Obesity in Greece

First national epidemiological survey on the prevalence of obesity in Greece



● A nationwide, cross-sectional epidemiological study, conducted from February 2003 to June 2003, designed to estimate obesity prevalence in the Greek population.



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First National Epidemiological Large Scale Survey on the Prevalence of Obesity in Greece



First national epidemiological survey on the prevalence of obesity in Greece

- Secondary schools throughout Greece were randomly chosen.
- Gym teachers were trained on anthropometric techniques.
- Students 13-19 years old had direct measurements at the schools by the teachers.





First national epidemiological survey on the prevalence of obesity in Greece

- **Instructions were given to children for measurements of their family members, which we were done at home.**
- **Data regarding socioeconomic status, dietary and drinking habits, physical activity, smoking habits, etc. was collected by a questionnaire filled by the students and all the members of their household.**



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Methods - 1



- WHR (waist-to-hip ratio) was calculated from waist and hip circumference (cm)
- The following categories were used:

	Boys	Girls
Normal	≤ 1.00	≤ 0.85
Abnormal	> 1.00	> 0.85

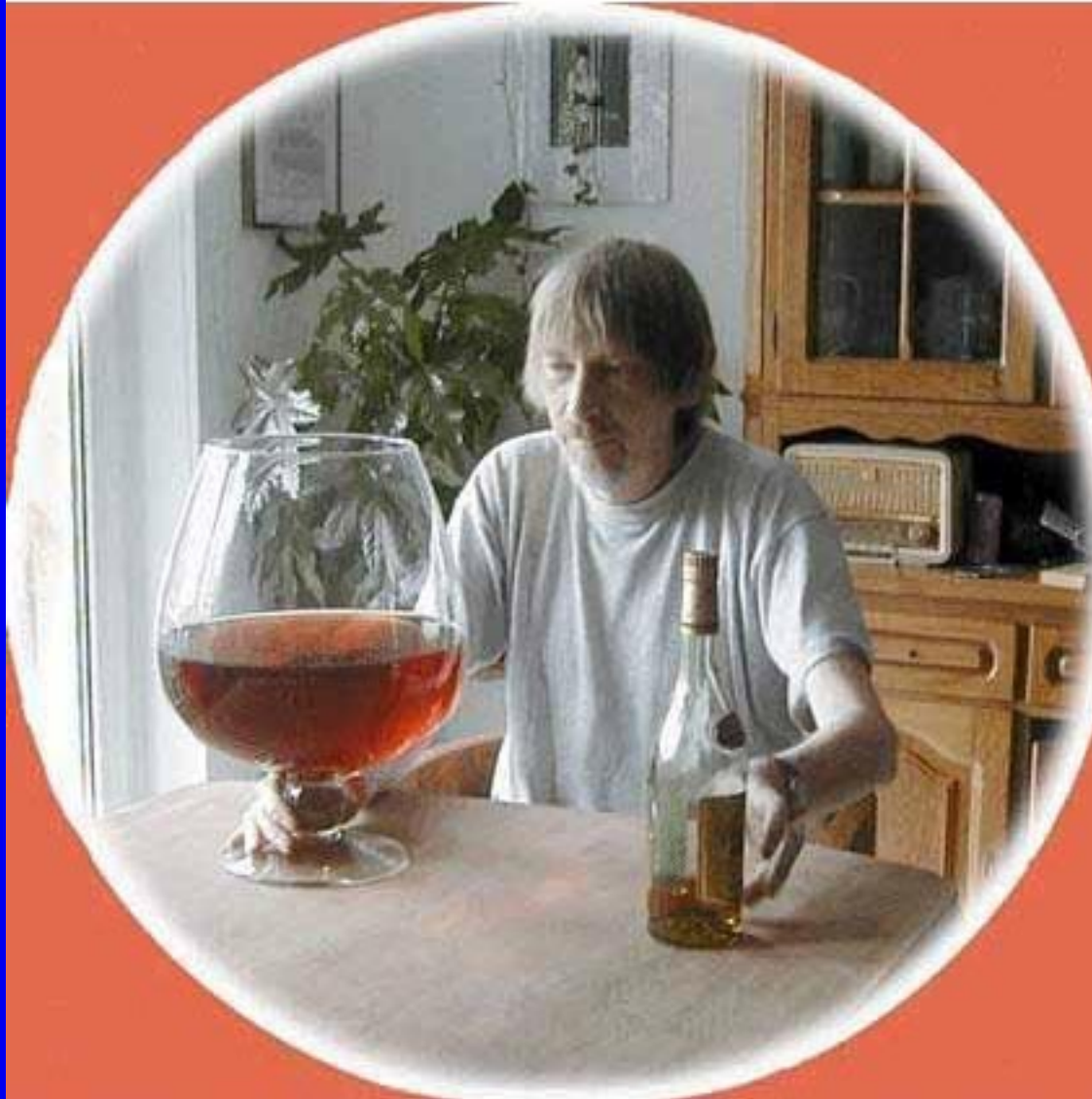


Methods - 2

- **Alcohol consumption was calculated by adding number of units consumed weekly, multiplied by alcohol comprehensiveness of each beverage.**
- **Subjects were divided to:**
 - **non drinkers (abstainers)**
 - **<50 mg/week**
 - **51 - 150 mg/week**
 - **151 - 300 mg/week**
 - **>300 mg/week**



My Doctor said "Only 1 glass of alcohol a day". I can live with that.



- **Just a moderate drinker (10g/day)!!!!**

Methods - 3

- **SPSS version 11.5 was used for statistical analysis**
- **Comparisons were made by Student's t-test and non-parametric tests.**

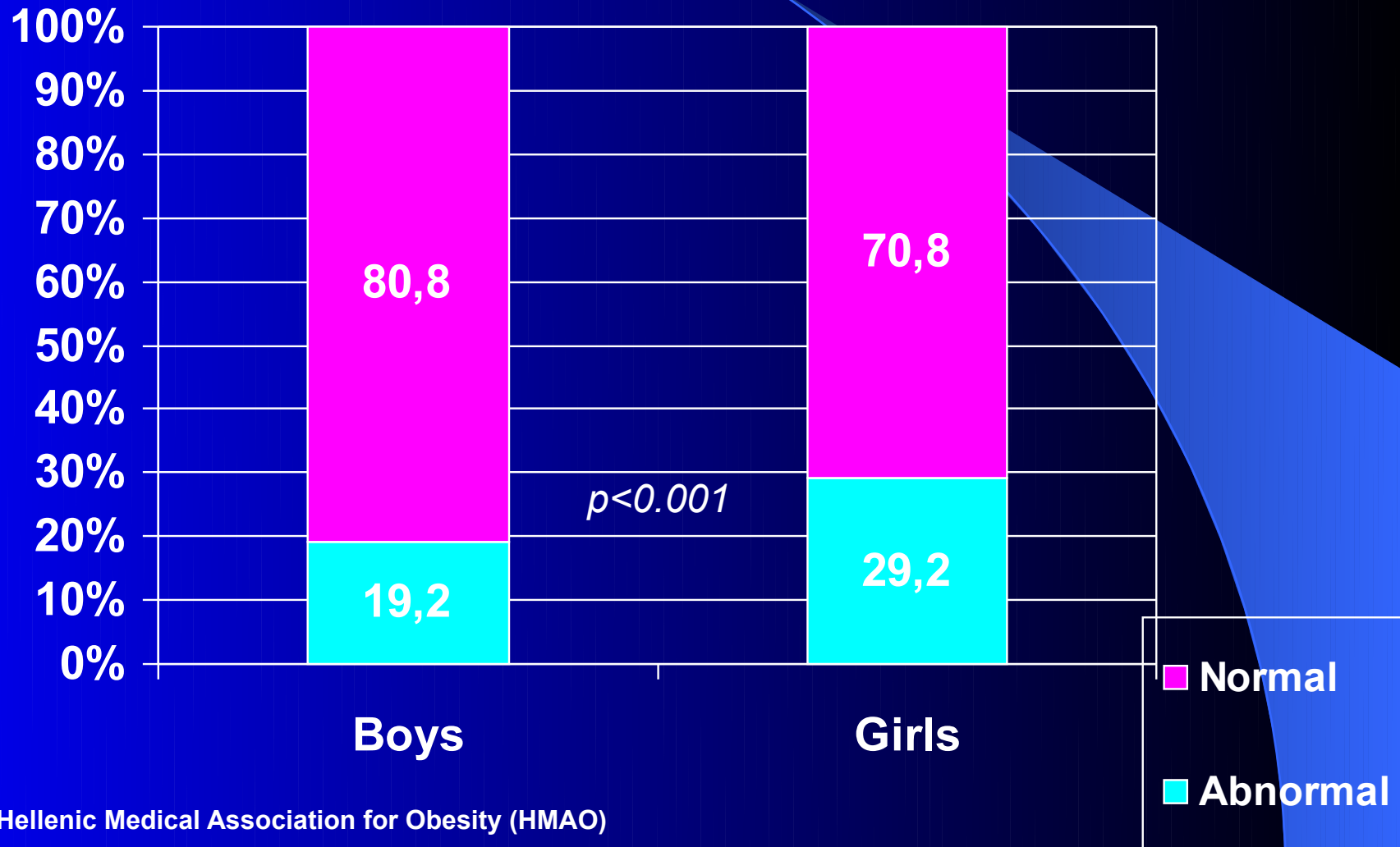


Results

- **12500 adolescents (5808 boys, age 15.2 ± 1.7 and 6692 girls, age 14.6 ± 0.9 years) were included in this study.**
- **WHR was 0.89 ± 0.31 and 0.82 ± 0.24 in boys and girls, respectively.**



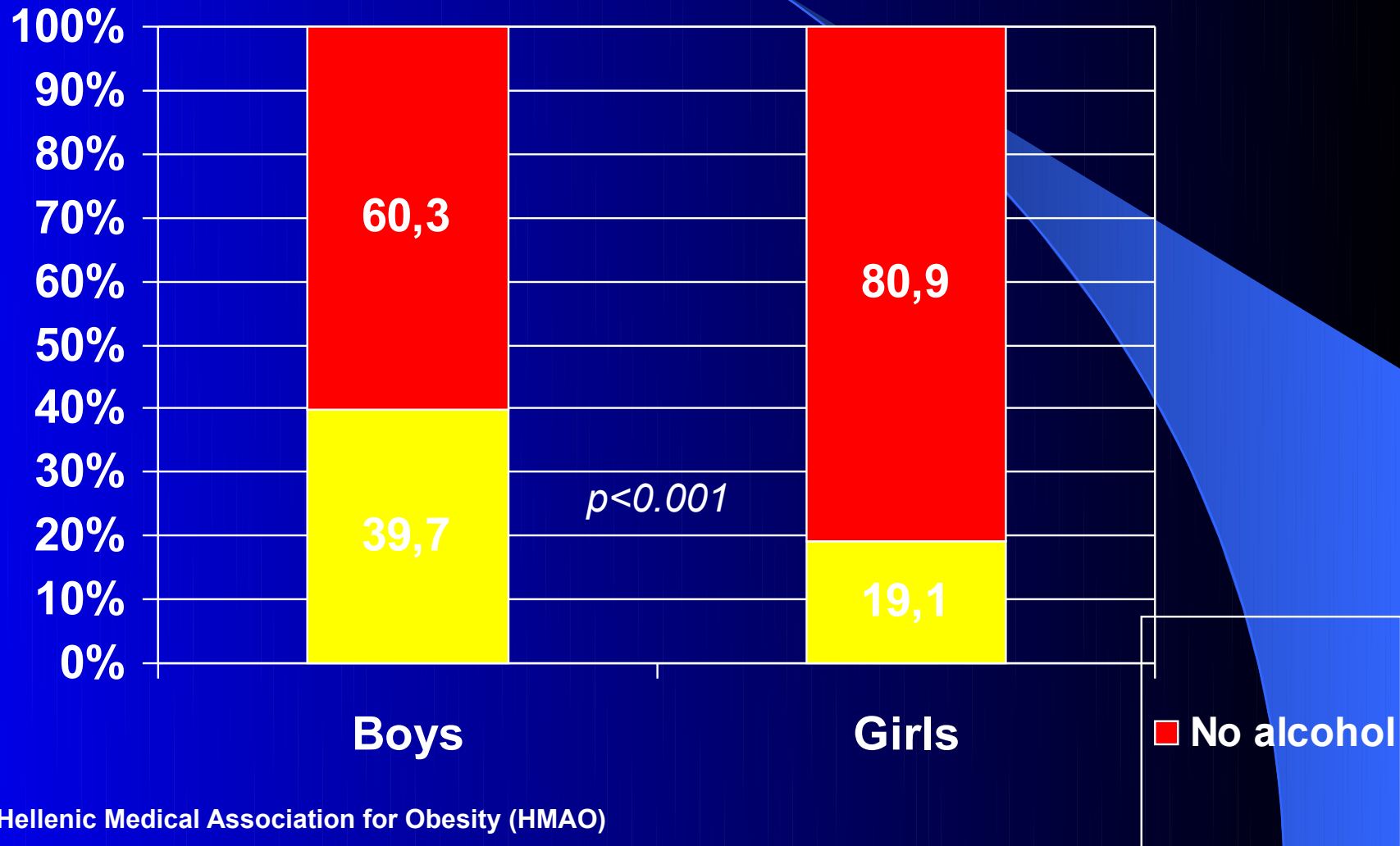
Waist-to-hip ratio in boys and girls



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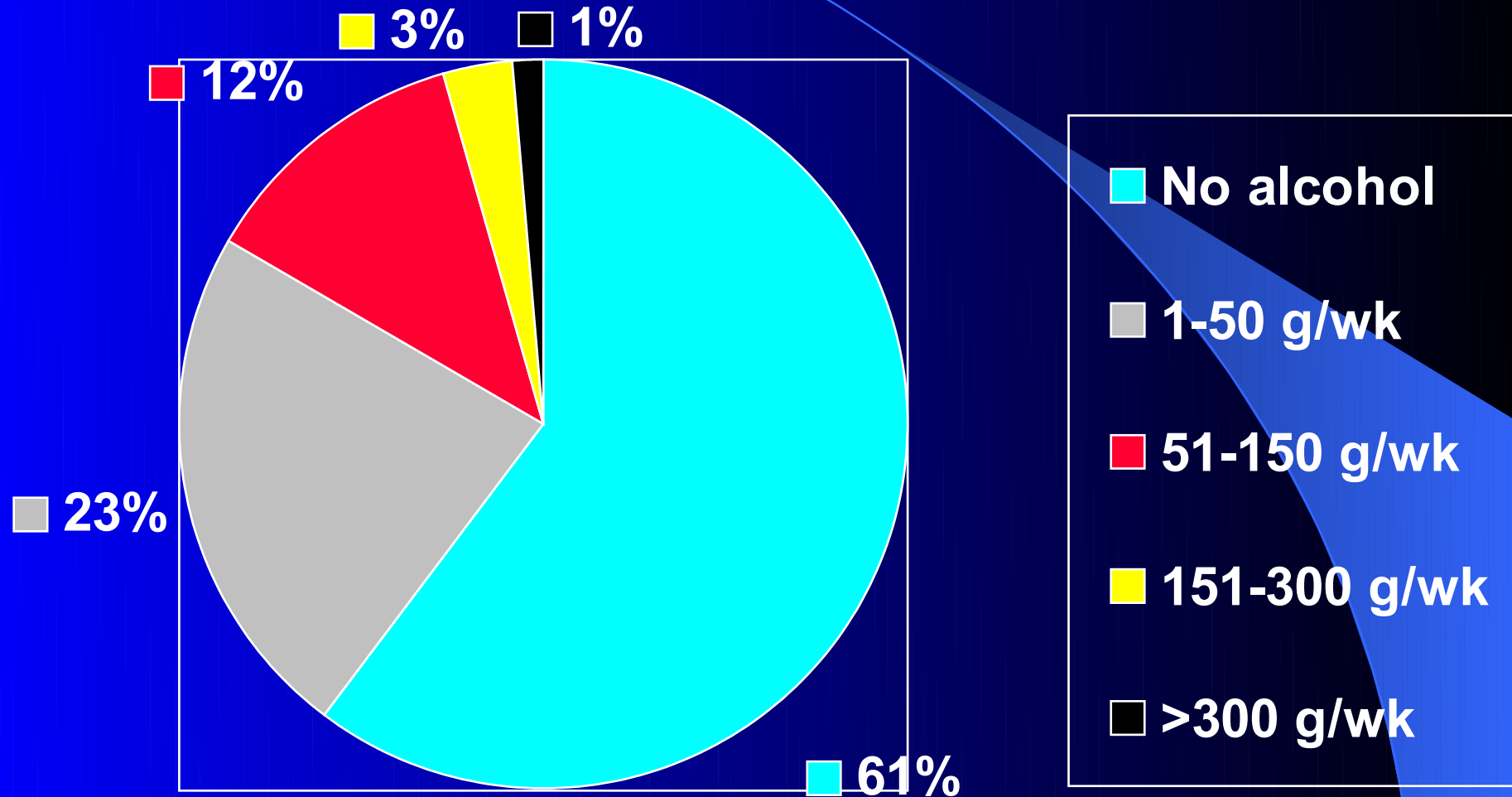
Proportion of boys and girls that drink no alcohol



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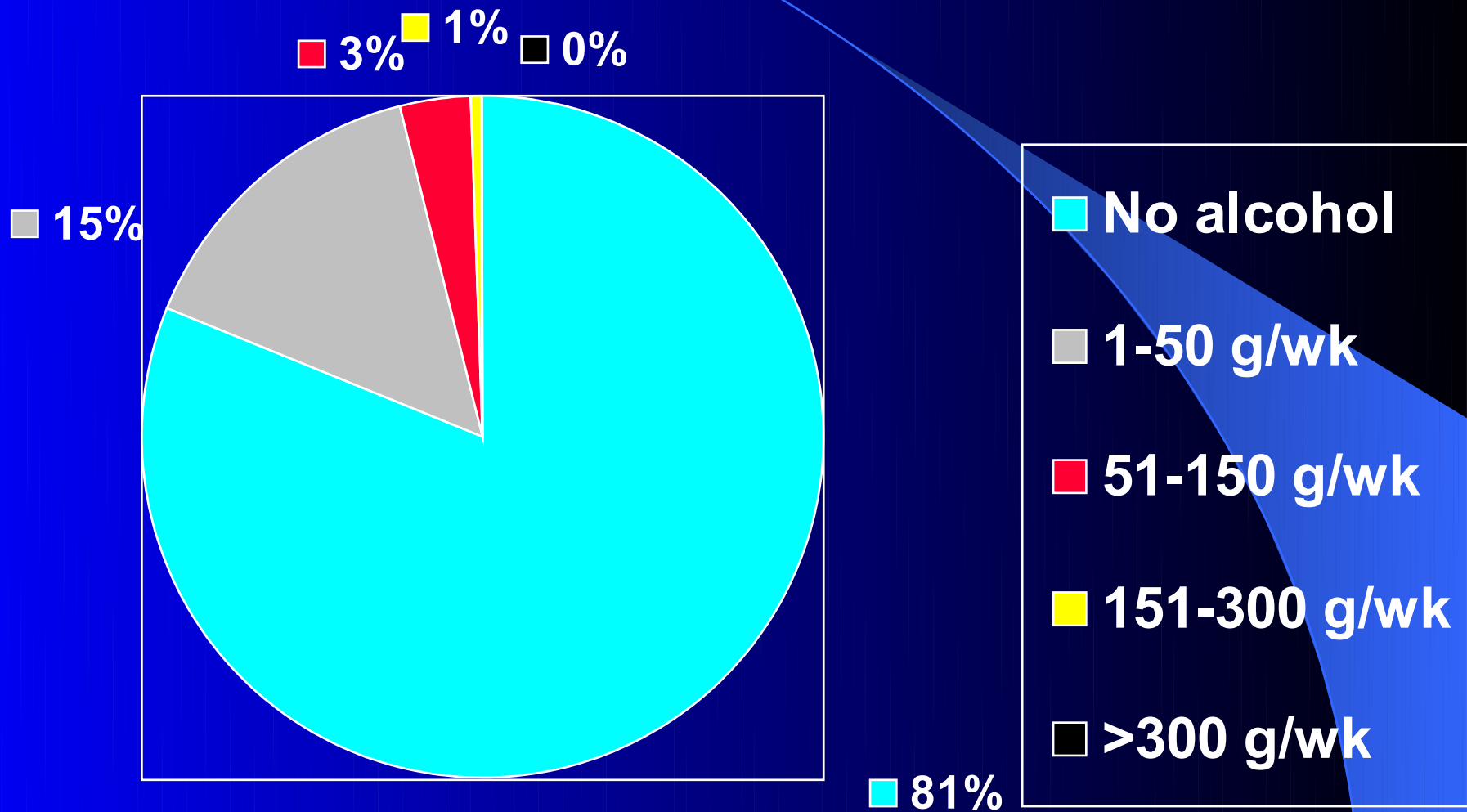
Alcohol consumption in adolescent boys



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Alcohol consumption in adolescent girls



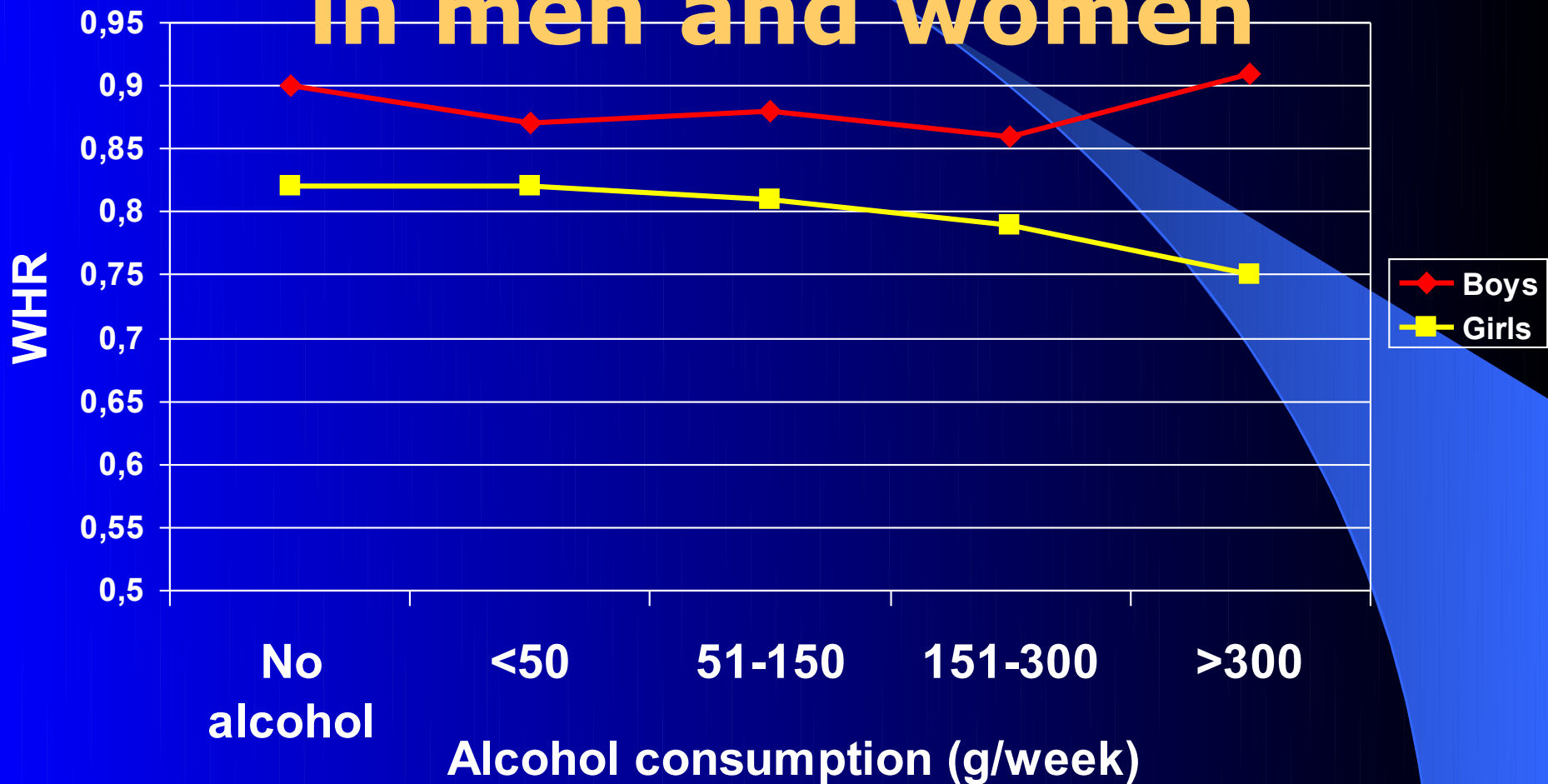
Results

- **In boys, WHR was associated to alcohol consumption ($p=0.006$, Kendall's tau-b).**
- **On the contrary, this was not the case with girls ($p=0.098$, NS).**



Alcohol consumption & WHR

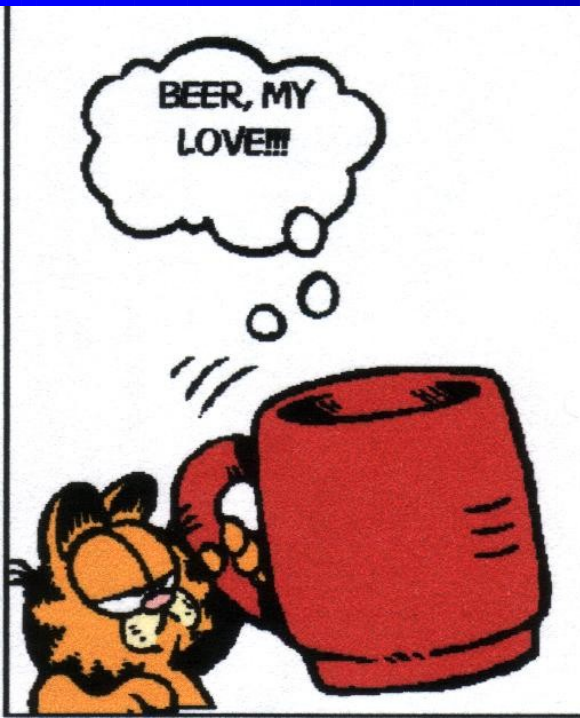
in men and women



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Conclusions



Conclusions - 1

- In the Greek population, adolescent boys drink more alcohol than girls.
- **4% of adolescent boys** and less than 1% of adolescent girls are heavy drinkers (>150 g/week)



Conclusions - 2

- Anthropometry showed that boys are more likely to have normal WHR than girls.
- Contrary to the effects of alcohol consumption to risk factors of various diseases, **alcohol is inversely related to abdominal obesity in moderate drinking boys, but not in girls.**

