



# The relationship between lifestyle, insulin resistance and semen quality

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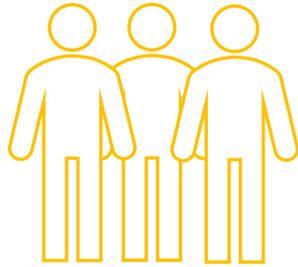
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Infertility as the condition which affects couples is focused on diagnostics to determine the underlying causes of it. Male infertility may result from spermatogenesis or spermiogenesis failure, as well as from the existence of mechanical obstructions that prevent healthy sperm from fusing with the ovum. The quality of semen is influenced by numerous factors, some of them we are able to influence and some of them not. When it comes to lifestyle and its components, important factors are: diet, physical activity, or sleep quality, among many others. A metabolic disorder closely connected with lifestyle is insulin resistance. The aim of study was to assess what is the relationship between lifestyle, insulin resistance and semen quality.

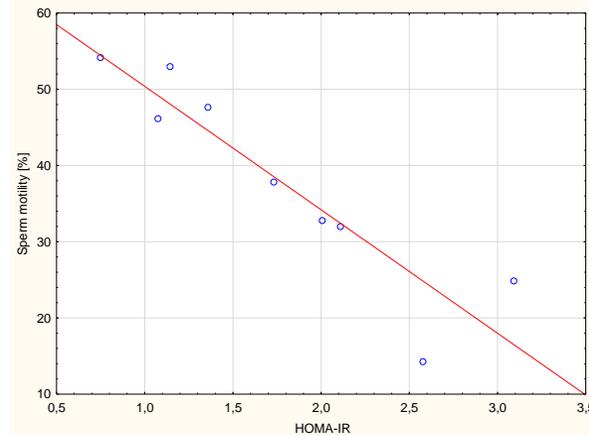


- Average age of respondents: 26.7 (+/- 3.29)
- Average BMI of respondents: 26.5 (+/- 4.04)
- Average sleep duration: 7h (+/- 0.5h)
- Average HOMA-IR score: 0.82 (+/- 1)

The preliminary study was conducted among 33 male patients with and without fertility impairment, broken down by the presence or absence of insulin resistance. The patients came from the KRIOBANK Infertility Treatment Clinic and the Endocrinology, Diabetology and Internal Diseases Clinic of the Medical University of Białystok.

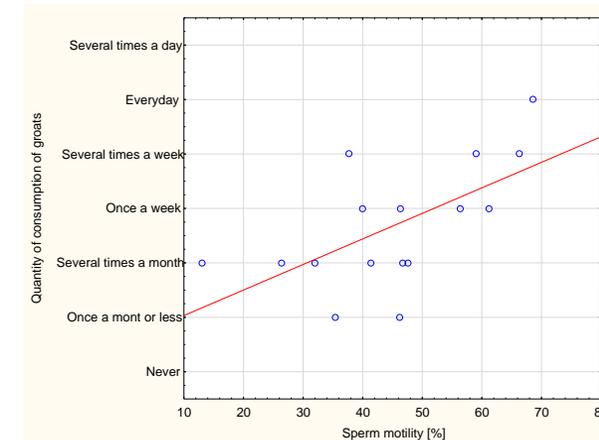
There was a statistically significant negative correlation between the level of HOMA-IR index and sperm motility. At this stage of the research, it was the only parameter from WHO standards that was statistically significant.

**Negative correlation ( $R=-0.93$ ,  $p=0.0002$ ) between the level of the HOMA-IR index and the sperm motility**



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**Positive correlation ( $R=0.6$ ,  $p=0.013$ ) between the quantity of consumption of groats products and sperm concentration**



Due to the fact in authors survey we asked about quantity of consumption of various groups of products. There was a statistically significant positive correlation between the quantity of consumption of groats and sperm concentration.

Men are less likely to be diagnosed with insulin resistance than women, a condition often associated with infertility, as it is often associated with PCOS. Due to the low glycemic index and the richness of vitamins and minerals, groats are products recommended for dietary support in the treatment and prevention of insulin resistance. In preliminary studies, a relationship can be seen between one of the insulin resistance indexes and semen quality, and between whole grains and semen quality.

## Conclusions:

From the already existing and preliminary own studies it can be concluded that there is a possible relationship between insulin resistance, lifestyle and sperm quality. More research on a much larger group is needed to confirm whether such a link really exists.