two groups. Analyzing separately subgroups of men and women showed that men lost their weigh independently from the fact of getting personal genetic cardiovascular risk estimates (1.5 kg and 1.8 kg in groups 1 and 2 accordingly), while women reduced their weight mainly in the group with genetic testing - 4.2 kg compared to control group who lost 0.8 kg. Conclusions: Our data reports that there can be gender-specific reaction to genetic testing. It was shown in previous studies that women in our population have more positive attitudes and beliefs to predictive genetic testing.

P01.74
Ethical Issues in pre-implantation genetic diagnosis in Portugal: a comparative analysis of professional's opinions in years 2000 and 2010 using questionnaires

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Medical genetics has made significant progress in the last decades, especially in the field of prenatal testing. After the dramatic expansion of prenatal diagnosis that started in the seventies, pre-implantation genetic diagnosis (PGD) became a reality in 1990, following advances in the techniques of medically assisted reproduction (MAR). Ethical problems related to this technique start well before the analysis: it is necessary to offer appropriate genetic counselling, to obtain informed consent for the necessary procedures and to maintain strict confidentiality of the whole process. The main ethical problems concern the status of the embryo, the investigation and the manipulation of embryos, eugenic or sex selection and the provision of resources. In 2000 a questionnaire addressing several of the principal ethical concerns, namely the attitude towards PGD, embryos and genetic testing, was distributed to the Directors of the five largest MAR centres in Portugal; in 2010 the same questionnaire was sent to 27 MAR centres and answered by 11. In all cases it was required that the answers should be based on the general policy of each centre. This work presents the comparative analysis of all the obtained data, particularly focusing on the main ethical problems related to this diagnosis, i.e., the status of the human embryo and the attitude of the genetic professionals working in this still relatively new, and very specific, field of genetic diagnosis.

P01.75
Prenatal diagnosis based on informed choice

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In general, prenatal test is recognized as population screening in many countries. For example, more than 80% women have maternal serum test as screening in the UK. In Japan, we do not offer maternal serum test as screening in most obstetrics services. We might provide the information of screening test and further chromosomal test such as CVS and amniocentesis with the information of genetic counselling. There is no regulation for prenatal diagnosis in ultrasound diagnosis, so some clinic would offer screening at some point and some do not. We do not scan the fetus as screening without patient's request at our hospital.

Historically, we have been concerned with prenatal diagnosis over 30 years at our hospital. At first, we had been doing only the test and given the result for referred patients; however we now offer genetic counselling for referred patients to avoid automatic screening and to have informed choice for prenatal diagnosis.

Prenatal diagnosis contains ethical issues all the time, but most pregnant women do not notice this problem until they consider termination at some point. Genetic counselling in prenatal diagnosis could be good support for the patient who has to face difficult ethical issues during pregnancy. It sometimes reduces unnecessary risk for worries and/or invasive test.

P01.76
Information related to prenatal genetic counseling: Interpretation by teenage students and ethical implications

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Among current teenagers we find a large proportion of future parents, some of whom will be seeking prenatal genetic counseling. Getting raised in the genomic era may not only increase the knowledge of available genetic testing but may also have an impact on how genetic information is perceived. However, little is known about how this teenage group reacts to the language commonly used by health care professionals providing prenatal counseling. In addition, as risk communication is related to numbers and figures, having different educational backgrounds may be associated with separate risk perceptions. In order to investigate these issues, a previously developed questionnaire (Abramsky & Fletcher, 2002) was administered to high-school students in Sweden. A total of 344 questionnaires were completed by students belonging to a natural science or a social science program. Our data show that teenage participants were particularly worried by the use of technical jargon and words like *rare* and *abnormal*. Negative framing effects and perception differences related to numeric risk formats were also present. There were some cases of gender and educational program effects on risk assessment but this outcome was not generalizable. Besides the questionnaire results, we discuss the ethical implications of the data based on the norm of non-directiveness and try to provide some basic guidelines. In general, genetic counselors should be aware that the language used within clinical services can be influential on this group of upcoming counselees.

P01.77
From rationing to rationality: an n-of-one trial service for off-label medicines for rare (neuromuscular) diseases

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Background: In the Netherlands, expensive medicines are not reimbursed for off-label use without sufficient evidence of efficacy. Patients with rare diseases are disadvantaged because the burden of proof is difficult to meet. There are obstacles both for industry and academia to performing large-scale randomized, controlled trials. Moreover, reimbursement rules discourage doctors from prescribing expensive medicines off-label, even to small groups of patients. Examples of reimbursement problems with off-label medicines are known from many rare disease areas, including genetic disease. Controlled n-of-one (single-patient) trials with internal randomisation (e.g. AB-BA-BA) could generate new evidence for rare, chronic conditions where the aim of treatment is symptom control.

Objective: This project aims to initiate development of an n-of-one trial service, embedded in the Dutch health care system. Pilot implementation will be designed, focusing on neuromuscular diseases as a model.

Methods: Reimbursement problems with off-label medicines for rare neuromuscular diseases are being inventoried among neuromuscular specialists and patients with neuromuscular disease in the Netherlands. A consensus meeting will be organized to define legal, ethical and scientific preconditions for formalizing and sustaining an n-of-one trial service. An electronic data registry system for n-of-one trials will be designed, and several protocols will be written for specific trials to be performed in a pilot implementation of the n-of-one trial service.

Implications: If an n-of-one trial service is successfully designed, a subsequent project can pilot trials for off-label neuromuscular indications and eventually others. Societal acceptance of n-of-one evidence may also stimulate development of genomic therapies tailored to rare genotypes.