Transplantation of frozen/thawed ovarian tissue for fertility restoration and regaining of fertility and menstrual cycles is rapidly gaining ground as a valid method for fertility preservation alongside cryopreservation of embryos and oocytes. More than 30 healthy children have been born worldwide as a result of this procedure after an estimated 150 women have had tissue transplanted. The procedure is most often carried out by excising one ovary or part of an ovary and leaving the remaining ovary in situ in case the treatment does not destroy all follicles. Until recently all babies born resulted from transplantation of frozen/thawed tissue to the remaining postmenopausal ovary.

In Denmark cryopreservation of ovarian tissue has been organized with one central laboratory as a national centre that freezes all tissue in close collaboration with three fertility clinics round the country. Totally more than 700 girls and women have had ovarian tissue cryopreserved in Denmark. The youngest girl was 0.5 years old and the oldest 38 years. We have currently cryopreserved ovarian tissue from around 150 girls younger than 16 years of age. The transport model includes that ovarian tissue is excised at the local hospital and transported on ice to the freezing facility, where cryopreservation and storage is performed. In case of transplantation the frozen tissue will transported to the local hospital for the operation back to the patient. This transport model has been validated and has now been used for more than 350 cases. In Denmark 40 women have experienced transplantation of frozen/thawed ovarian tissue a total of 52 times (12 women having tissue transplanted twice). All women regained ovarian function and none have experienced relapse as a consequence of the transplantation. Over a period of 20 – 25 weeks levels of FSH gradually return to pre-menopausal levels and menstrual cycles are regained. The longevity of the tissue depends on the age of the woman at tissue retrieval and the amount of tissue transplanted. However, the period of ovarian activity after transplantation is surprisingly long and most women experience return of ovarian function for some years with just a fraction of tissue from one ovary being replaced. A number of women have been pregnant and a total of 8 children have currently been born. The presentation will review our experiences and results with transplantation of cryopreserved ovarian tissue.