



Princess
máxima
center
pediatric oncology



PRE-PRESERVATION 54th BSRM scientific meeting

Irene IJgosse, nurse practitioner oncofertility
on behalf of the oncofertility team, Princes Máxima Center for Pediatric Oncology

28-29 November 2025



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Nothing to disclose

28-29 nov 2025

Some numbers in pediatric oncology

- Each year 400.000 children and adolescents 0-19 year develop cancer (in Netherlands 600 children a year)
- Most common types are leukemias, brain tumors, lymphomas and solid tumors
- In high-income countries >80% children are cured, in low and middle-income countries less than 30% (source WHO)
- 20% girls oncological treatment high risk for fertility
- 30% boys oncological treatment high risk for fertility
- 75% survivors find fertility very important for quality of life



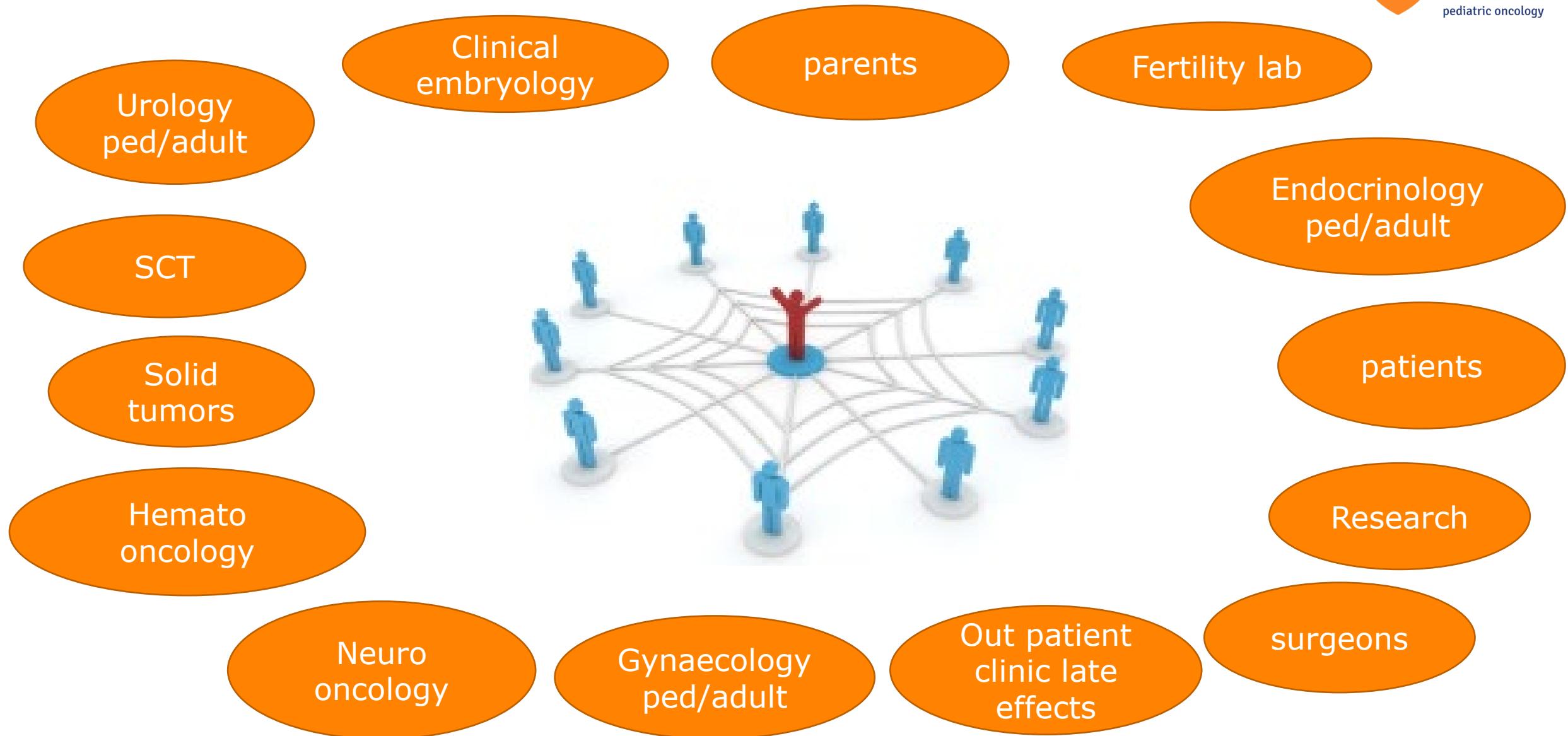
**Our mission : 'Curing every child who has cancer,
with providing an optimal quality of life'**

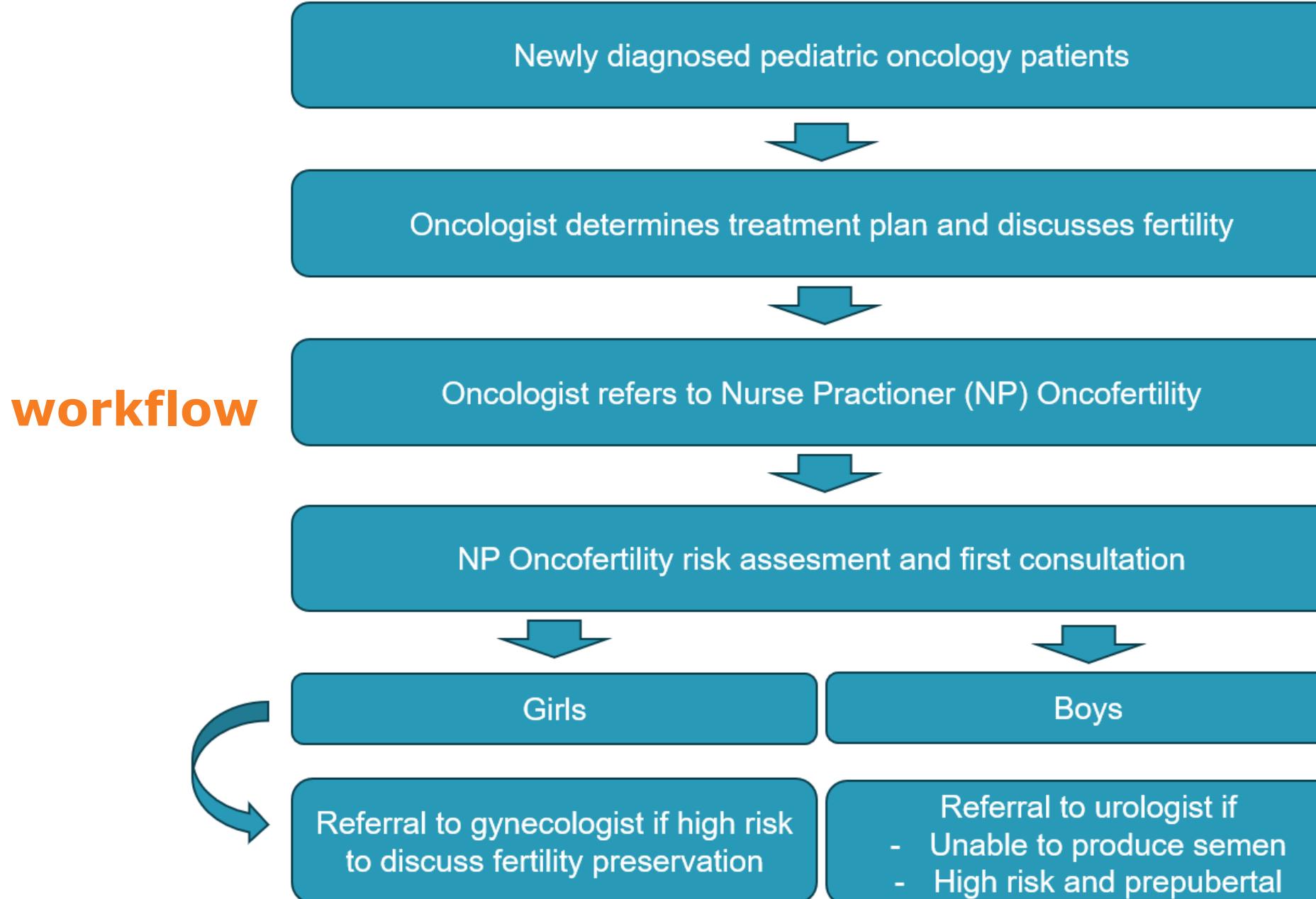


**600 new pediatric cancer diagnosis
1 national pediatric oncology center in the Netherlands**



Organisation of oncofertility





Guidelines on fertility preservation in pediatric oncology patients



Overview of current international and European fertility preservation guidelines

European guidelines

ESHRE Female Fertility Preservation

ESHRE good Practice, testicular tissue cryopreservation

ORCHID network



International Guidelines

PanCareLIFE Consortium

International Guideline Harmonization Group: Female, Male, Ethics/Communication



FIGURE: Recommendations for reproductive fertility preservation for female childhood, adolescent and young adult cancer patients diagnosed before age 25 years.

Female childhood, adolescent and young adult cancer patients diagnosed before age 25 years									
Strong recommendation ³ to inform all childhood, adolescent and young adult cancer patients and their parents/caregivers/partners about the expected risk of infertility									
Female reproductive fertility preservation counselling and methods	At potential risk for infertility								Not at risk for infertility
	High-dose AA ² , RT ovaries, HSCT		Low-dose AA ⁴ , cranial RT		Unilateral oophorectomy		Other treatment groups ⁵		Not at risk for infertility
	Post-pubertal ³	Pre-pubertal	Post-pubertal ³	Pre-pubertal	Post-pubertal ³	Pre-pubertal	Post-pubertal ³	Pre-pubertal	Not at risk for infertility
	Counselling about fertility preservation options and alternative family planning	Strong recommendation ⁶	Strong recommendation ⁶	Strong recommendation ⁶	Strong recommendation ⁶	Strong recommendation ⁶	Strong recommendation ⁶	Moderate recommendation ⁷ only if requested	Moderate recommendation ⁷ only if requested
	Oocyte or embryo cryopreservation	Strong recommendation only if cancer prognosis is not compromised by delay ⁸		Moderate recommendation only for patients at high risk of cancer recurrence ^{8,9,10}		Moderate recommendation only for patients at high risk of cancer recurrence ^{8,9,10}		Moderate recommendation only for patients at high risk of cancer recurrence ^{8,9,10}	
	Ovarian tissue harvesting for cryopreservation ¹¹	Moderate recommendation ¹²	Moderate recommendation ¹²	Not recommended ¹²	Not recommended ¹²	No recommendation (insufficient evidence)	No recommendation (insufficient evidence)	Not recommended ¹²	Not recommended ¹²
	Oophorectomy (before radiotherapy to ovaries)	Moderate recommendation ^{13,14}	Moderate recommendation ^{13,14}						
	Hormone suppression during alkylating agent chemotherapy	No recommendation for clinical care, only in research setting (insufficient evidence)		No recommendation for clinical care, only in research setting (insufficient evidence)					



Fertility Preservation in PITTSBURGH

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Cyclophosphamide

5400

1

5400

Ifosfamide

36000

0.244

8784

Procarbazine

0

0.857

0

Chlorambucil

0

14.286

0

BCNU

0

15.0

0

CCNU

lomustine

0

16.0

0

Melphalan

0

40

0

Thio-TEPA

0

50

0

Nitrogen mustard

0

100

0

Busulfan

0

8.823

0

Significant Risk

TOTAL CED

14,184

Green DM et al. The cyclophosphamide equivalent dose as an approach for quantifying alkylating agent exposure: a report from the Childhood Cancer Survivor Study. Pediatr Blood Cancer. 2014 Jan;61(1):53-67

Boys

Semenpreservation

Oncotese

Prepubertal testisbiopsy in
research (PRINCE)

Fertility counseling &
semen/hormone evaluation

Girls

Ovarian Tissue Cryopreservation

Oocyte stimulation and preservation

Ovarian transposition

Fertility follow up & hormonal
assessment

Challenges pre counseling

Medical

Localisation
tumor

Assessment
condition of child
before/during
surgery

Uncertainties future use



Emotional stress

Personnel factors

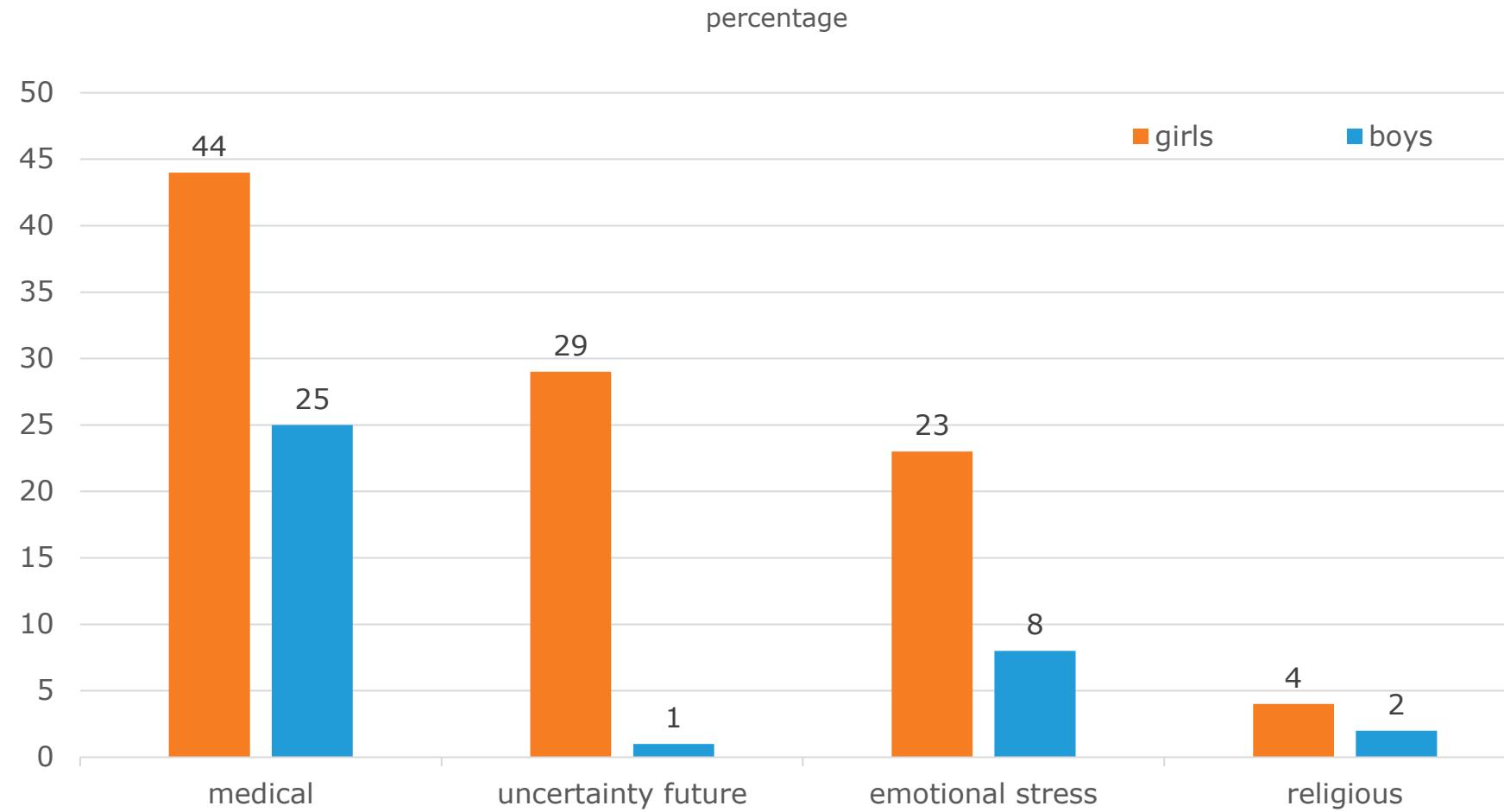
Religious believes

Global developments

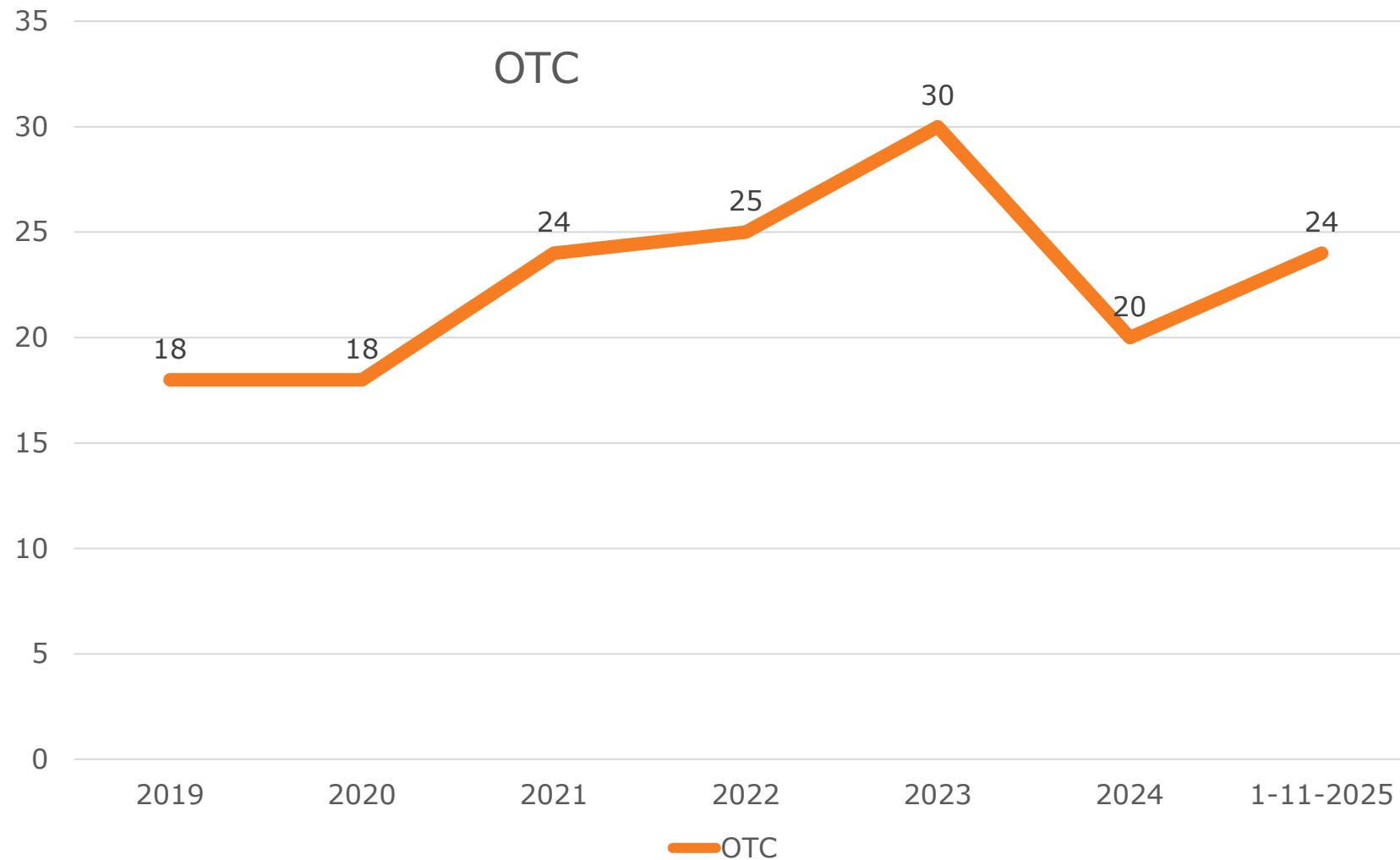
- Elective intervention like fertility preservation is not necessary for survival
- Coordinate the right time for counseling with oncologist
- Need for rapid action in pediatric oncology, sometimes start chemotherapy within 24 hrs
- Estimation of real chance of survival
- Risk for complications in OTC, publication follows

In HR risk fertility population; 60% girls and 40% boys NO use of fertility preservation

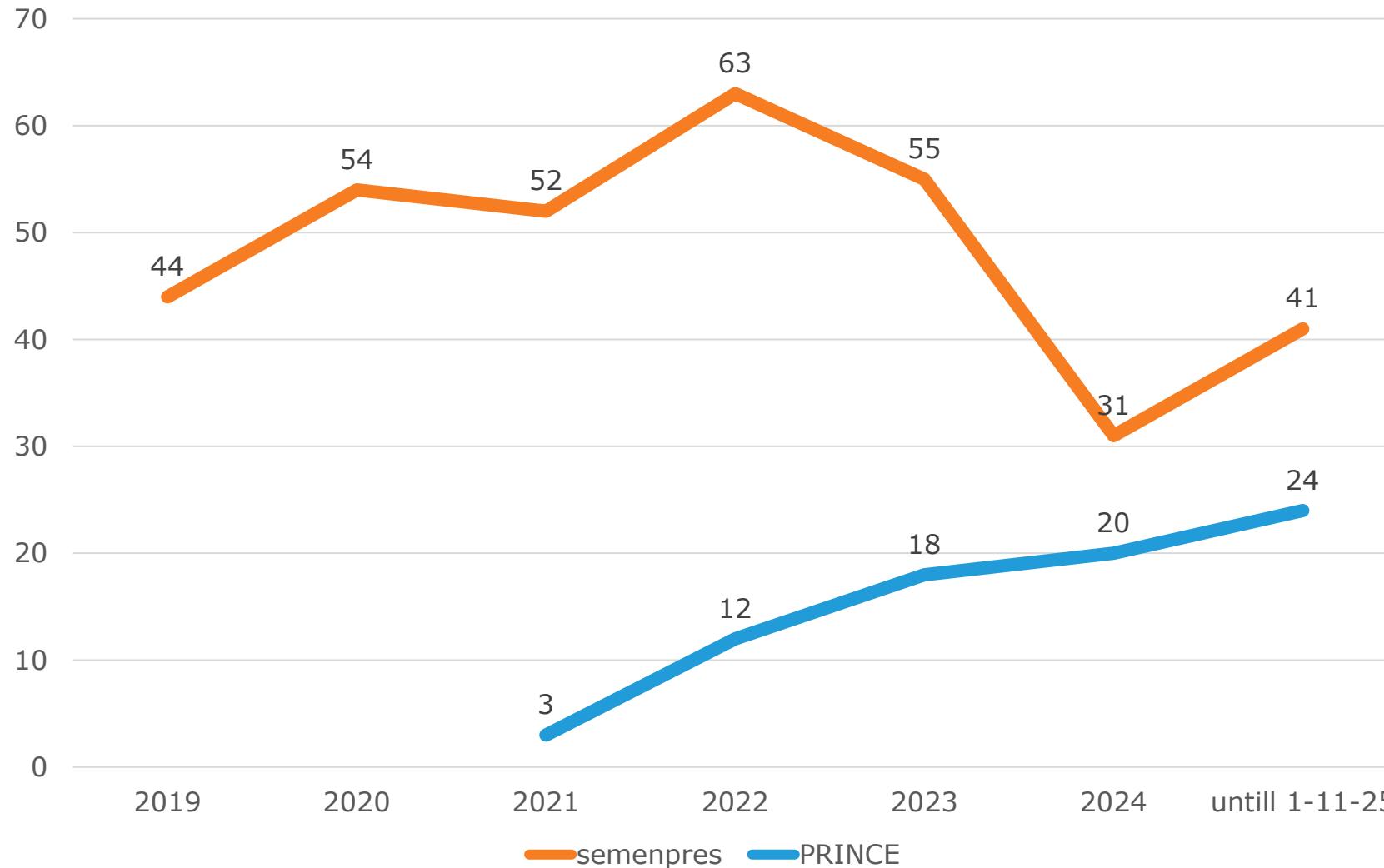
Reasons to refrain of fertility preservation



Ovarium Tissue Cryopreservation 2019 / 1-11-25



Preservation boys 2019 / 1-11-25, PRINCE started in 2021





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cases

Psycho social challenges in daily practice

case 1; Charles

Patient; 11-year-old boy diagnosed with pelvic Ewing sarcoma

Treatment; contains high-dose cyclofosfamide, CED 23,9 g/m²

Fertility preservation; Parents favoring a holistic approach, are against fertility preservation intervention, however, Charles wishes to preserve fertility

Counseling challenges; counseling prepubertal testicular biopsy is difficult, mother leaves the room multiple times

Urgency: oncological treatment must start within 4 days

Decision:

Following multidisciplinary consultation (2 oncologists, psychologist, social worker, NP fertility), the decision was made to prioritize family harmony by adopting a wait-and-see approach regarding FP.

Patient; 5-year-old girl diagnosed with undifferentiated acute leukemia (june 2025)

Treatment; Poor response to leukemia protocol; planned for SCT with high-dose alkylating agents and TBI. Oncologic therapy currently paused due to active fungal infections. Conditioning carries a high risk of infertility.

Fertility preservation; parents request ovarian tissue cryopreservation(OTC).

Counseling challenges; lab shows severe cytopenia: platelets 14 (norm >50), leukocytes 0.8 (norm >4000), neutrophils 0.02 (norm >1.5), Hb 4,7 (norm>6.8), trombo's 24 (norm>50)-> multiple granulocyte and trombocyte transfusions.

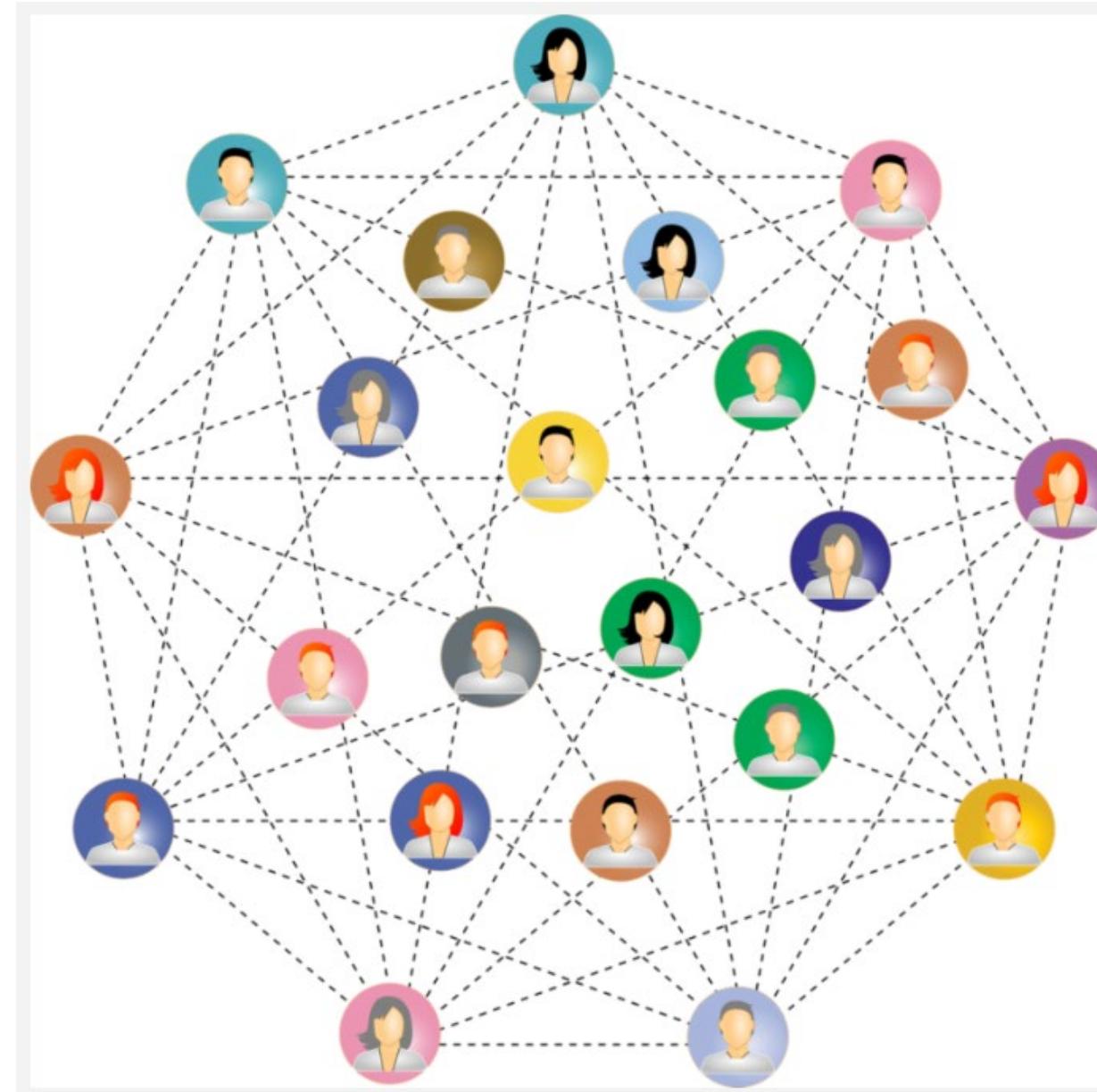
Considerations; A narrow window exists in which blood counts may be adequate for SCT. OTC could technically be performed in this window. But we are afraid to cause complications, which may jeopardize the SCT(manuscript to be published)

Decision:

Multiple evaluations and multidisciplinary consultations (oncologist, surgeon, gynaecologist, SCT specialist, fertility NP), decision elective surgery for OTC is too much high risk and unsafe.

Connection

Trust



Teamwork

Let's listen to Floortje



Think of Floortje; give your patients all the options



Thanks to ...

Patients and parents

Dr M van de Wetering

Dr S.L. Broer

Dr J. van Leeuwen

Dr C.H.E. Weimar

Dr A.M.C. Mavinkurve-
Groothuis

Dr. M.A. Veening

Onco fertility working group

Multidisciplinary working group
including members from the
Máxima and from the UMCU,
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Male research PMC

NL 73818.000.21

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