Definitions of calculated combined PRA, transplantability score, and PRA

A donor pool, based on 5000 recently HLA typed deceased donors registered in Scandiatransplant, has been made. The pool forms the basis of the Transplantability Score and calculated combined PRA.

	Calculated PRA (cPRA)	Transplantability Score (TS)
HLA information used in calculation	HLA antibody specificities defined on the patient. HLA-A, B, C, DRB1 and DQB1	HLA antigen typing and defined acceptable HLA mismatches on the patient. HLA-A, B, C, DRB1, DRB3, DRB4, DRB5, DQA1, DQB1, DPA1 and DPB1 antigens
AB0 used in calculation	No	Yes
Result based on the donor pool	Percentage of donors which the patient has antibodies against.	Percentage of donors which are AB0 identical/compatible and have HLA split level antigens that are acceptable to the recipient
Describes the probability of finding a suitable donor	No, AB0 is not included	Yes, dependent on the size of the donor pool

1. Calculated combined PRA (cPRA)

It gives you a combined Class I + II PRA, which is the percentage of donors that the patient has antibodies against regardless of AB0.
A 'real' cell panel often represents as many antigens as possible, thus the distribution of antigens is not comparable to the real population. As the calculated combined PRA is based on a large donor pool it doesn't have that disadvantages.
Furthermore, a *combined* PRA gives you a probability of the risk of a positive crossmatch. A patient could have a Class I PRA = 50% and Class II PRA = 38%, but a combined PRA = 86%.

Example: PRA = 80%
The patient has antibodies against 80% of the donors

➔ 0,80 x 5000 = 4000 donors
➔ Will not have antibodies against 1000 donors, but then AB0 has not been taken into consideration!

a. **All, cPRA based on antibody summary**
   This calculation is based on all antibodies listed in the 'HLA antibody summary', both historical identified and current antibodies.
   Only antibodies set as acceptable (not clinical relevant) are not included.
   Calculation is updated each time new antibody screen test results are add in YASWA (both manually entered and automatically transferred)

b. **1 year, cPRA based on antibodies defined within the latest year**
   This calculation is based on all antibodies specified in HLA antibody screen tests within the latest year.
   Calculation is updated each time you enter the patient record in YASWA or when data is extracted

c. **Sample, cPRA based on antibodies defined on a specific sample**
   This calculation is based on antibodies defined in a specific sample examples 'Latest sample', which is the most recent result and 'Latest sample before termination from waiting list', which is latest result before termination/transplantation.
   Calculation is found on each sample and done every time a HLA antibody screen test result is added/updated on a recipient in YASWA (both manually entered and automatically transferred).

2. Transplantability Score (TS)

The TS is based on acceptable HLA mismatches and AB0.
It gives you the percentage of donors which are AB0 identical (TS, AB0 identical) or compatible (TS, AB0 compatible) and have HLA split level antigens that are acceptable to the recipient.
Compared to the PRA based evaluations the calculation has the advantage of taking both HLA as well as AB0 into consideration, resulting in a more realistic estimate of finding a suitable deceased donor kidney for the individual patient and especially for patients with rare AB0 types.

Example: TS = 2%
The patient could get at suitable graft from 2% of the donors

➔ 0,02 x 5000 = 100 donors

If you want to look at the probability of getting the patient transplanted, one must look at a certain donor pool size/time period.

➔ With around 600 donors per year in Scandiatransplant:

(TS/100) x number of donors per year = number of donors matching within 1-year (2024)
(2/100) x 600m= 12 matching donors per year

a. **Estimated TS based on antibodies specified within the latest year**
This calculation uses all antibodies specified in HLA antibody screen tests within the latest year and sets all antigens which the recipient has no antibodies against as acceptable mismatches.
Calculation is updated each time you enter the patient record in YASWA or when data is extracted

b. **Estimated TS based on antibodies specified in latest antibody screen test**
This calculation uses antibodies defined in latest sample and sets all antigens which the recipient has no antibodies against as acceptable mismatches.
Calculation is updated each time a new antibody result is inserted or the most recent result is updated.

c. **Calculated TS based on defined acceptable mismatches**
This calculation is done directly on the acceptable mismatch defined by the tissue typing lab, thus only available on recipients with a STAMP/LAMP record.
Calculation is done when acceptable mismatches are defined and updated.

3. <u>PRA</u>

The following definitions and cut-offs are used within Scandiatransplant in relation to HLA immunization

HI: Highly Immunized (PRA ≥ 80%)
I: Immunized (PRA 10-79%):
LI: Low Immunized (PRA 1-9%)
PI: Previously Immunized (Now PRA = 0%, but prev. > 0%)
NI: Not Immunized (PRA = 0%)
ND: Not Done