

REVIEW OF THE “MAJOR CONCERN” IN
DONOR VIGILANCE:

DONOR VASOVAGAL REACTIONS

HOW CAN WE REDUCE THEM?

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Content

- Introduction; data on donor adverse reaction rates
- Short review of evidence based methods effective in reducing VVR:s
- Some examples of activities we have done in our national blood establishment in order to reduce VVR rates

Introduction 1/2

- VVR:s - majority of reported donor adverse reactions
- Rate of VVR:s for WB donors
 - VVR without LOC 1.0 -7.0 %
 - VVR with LOC 0.1 – 0.5 %

Introduction 2/2

- Complex issue;
 - Can occur before, during or after donation
 - Long list of risk factors – not possible to mitigate 100%
- VVR:s
 - ☹️ unpleasant experience, ☹️ harm, ☹️ risk for trauma, ☹️ reduced donor return rates and ☹️ extra work
- Three main categories of methods effective in preventing/reducing VVR:s
 - Donor selection / donation process related strategies
 - Physiological methods
 - Psychological methods

Donor selection / donation process related strategies

- VVR-rates ↓
 - Risk groups
 - Young female donors
 - Donors with low weight or BMI / estimated blood volume
 - Donors with history VVR:s or other adverse events in previous donations
 - First time donors (😊)
 - What should we take to account in donation process?
 - Collection volume (especially in aphereris donations)

Ref: Wiltbank et al: Faint and pre-faint reactions in WB donors: an analysis of predonation measurements and their predictive value. Transfusion 2008.

Bravo et al: Factors associated with fainting – before, during and after WB donation. VoxSanguinis 2011

Tomasulo et al: Interventions to reduce the VVR rate in young WB donors, Transfusion 2011

Wiersum-Osselton et al: Risk factors for complications in donors at first and repeat WB donation: a cohort study with assessment of the impact on donor return. Blood Transfus 2014

Fisher et al: Interventions to reduce vvr:s in blood donors; a systematic review and meta-analysis. Trans Med 2015

Narbey et al: Case-control study of immediate and delayed vasovagal reactions in blood donors. VoxSanguinis 2016

Thijssen et al: Vasovagal reactions in blood donors: risks, prevention and management. Trans Med 2017

Vassallo et al: Improved donor safety in high-volume apheresis collections. Transfusion 2017.



Physiological methods

Medical, physiological based clinical interventions; (for BE:s a "familiar" framework)

Prevent hypotension- > VVR:s rates ↓

- **Water** or isotonic drink (475-500 ml)
- Applied muscle tension
- Water + Applied muscle tension
- (Caffeine, salt intake)?

Ref: Hanson & France 2004, France et al 2010, van der Berg et al 2012, Newman et al 2007, Newman et al 2005, Newman et al 2006, Newman et al 2007, Ditto et al 2003, Ditto and France 2006, Ditto et al 2007, Ditto et al 2009, Kowalsky et al 2010, Kowalsky et al 2011, Ditto et al 2010, Holly et al 2011, Holly 2012, Ditto 2013, Sauer and France 1999, Morand et al 2016.

Fisher et al: Interventions to reduce vvr:s in blood donors; a systematic review and meta-analysis. Trans Med 2015

Thijssen et al: Vasovagal reactions in blood donors: risks, prevention and management. Trans Med 2017



Psychological methods

Theories and approaches ≠ "traditional clinical tools"

Less number of studies than of physiological methods

Evidence mainly for presyncopal reactions and among young, first time donors

- Assessment of donor fear (simply by asking the donor)
- Audio-visual distraction (blunting (watching and listening a video on a personal device + headset))
- Social support (novice donors, effect on pre-fainting symptoms)
- Applied muscle tension (not only the physiological effect, but also the effect of "doing something")

Ref: Bonk et al Distraction reduces self-reported physiological reactions to blood donation in novice donors with a blunting coping style, Psychosom Med 2001 Hanson and France: Social support attenuates presyncopal reactions to blood donation, Transfusion 2009

France et al: Assessment of donor fear enhances prediction of presyncopal symptoms among volunteer blood donors, Transfusion 2012

France et al: How afraid are you of having blood drawn from your arm? A simple fear question predicts vasovagal reactions without causing them among high school donors, Transfusion 2013

Fisher et al: Interventions to reduce vvr:s in blood donors; a systematic review and meta-analysis. Trans Med 2015

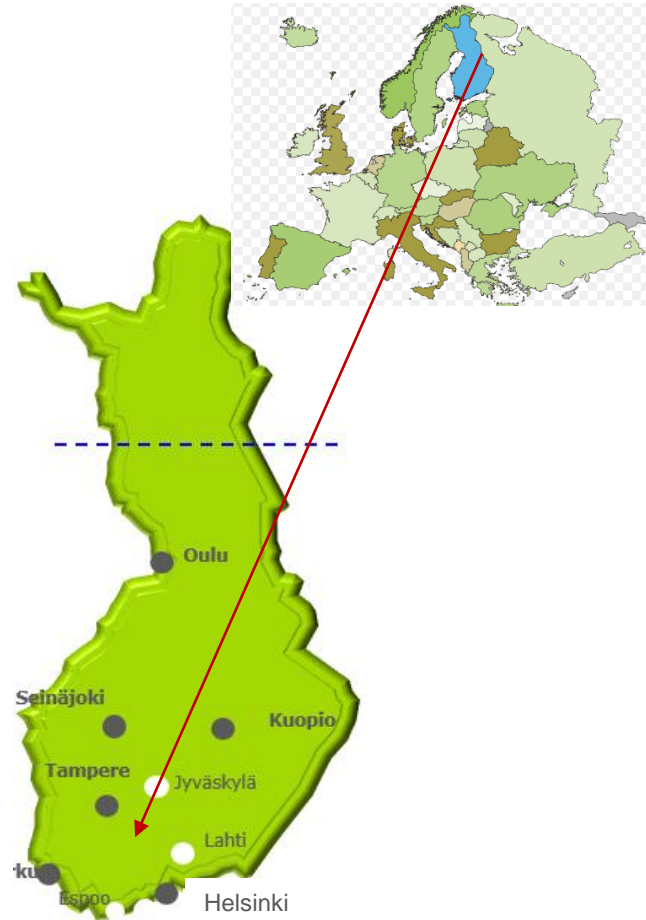
Thijssen et al: Vasovagal reactions in blood donors: risks, prevention and management. Trans Med 2017



Finnish Red Cross Blood Service in a nutshell

Finland:
5,5 M total population

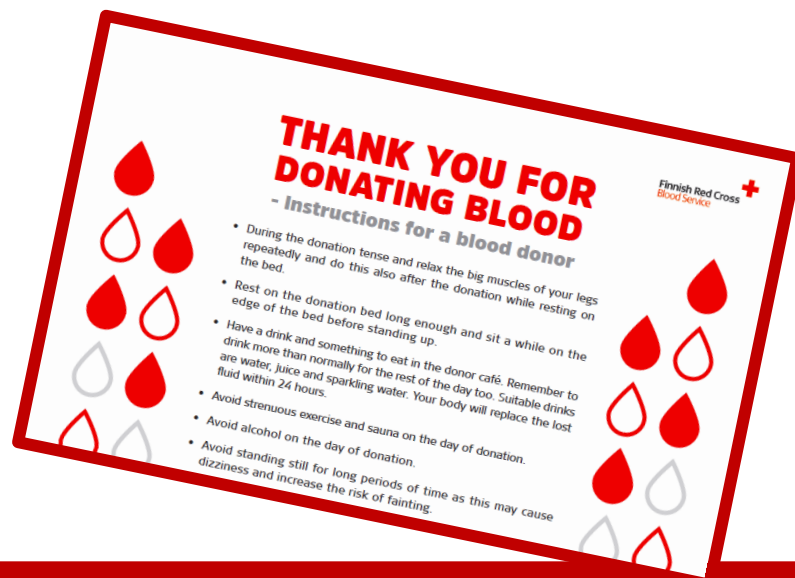
- 200.000 WB donations/year
- 2.600 PLT donations/year



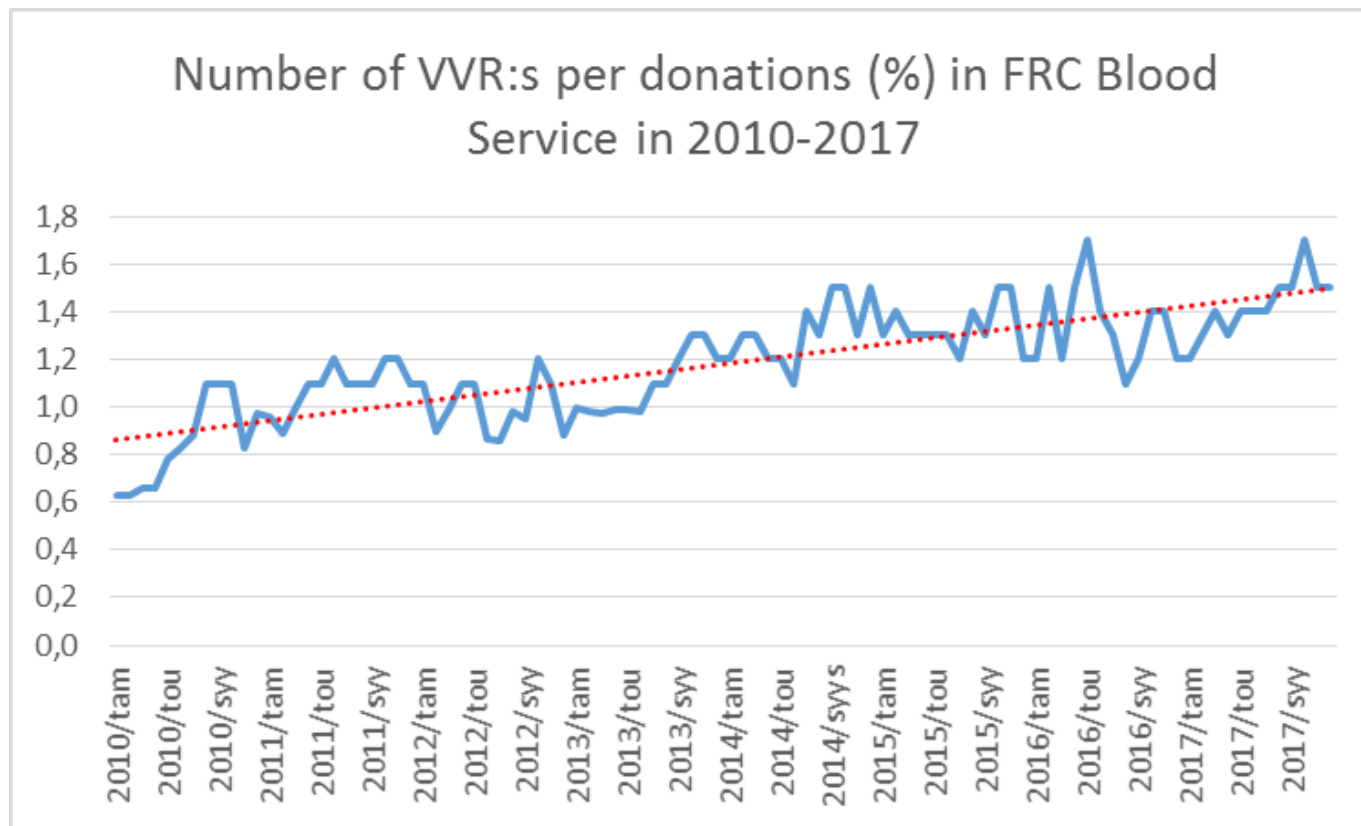
- 10 donor centers
- 7 mobile teams
 - 46% of collections in mobile
- 431 FTEs

What have we done 2010-2017 in order to minimize the number of VVR:s?

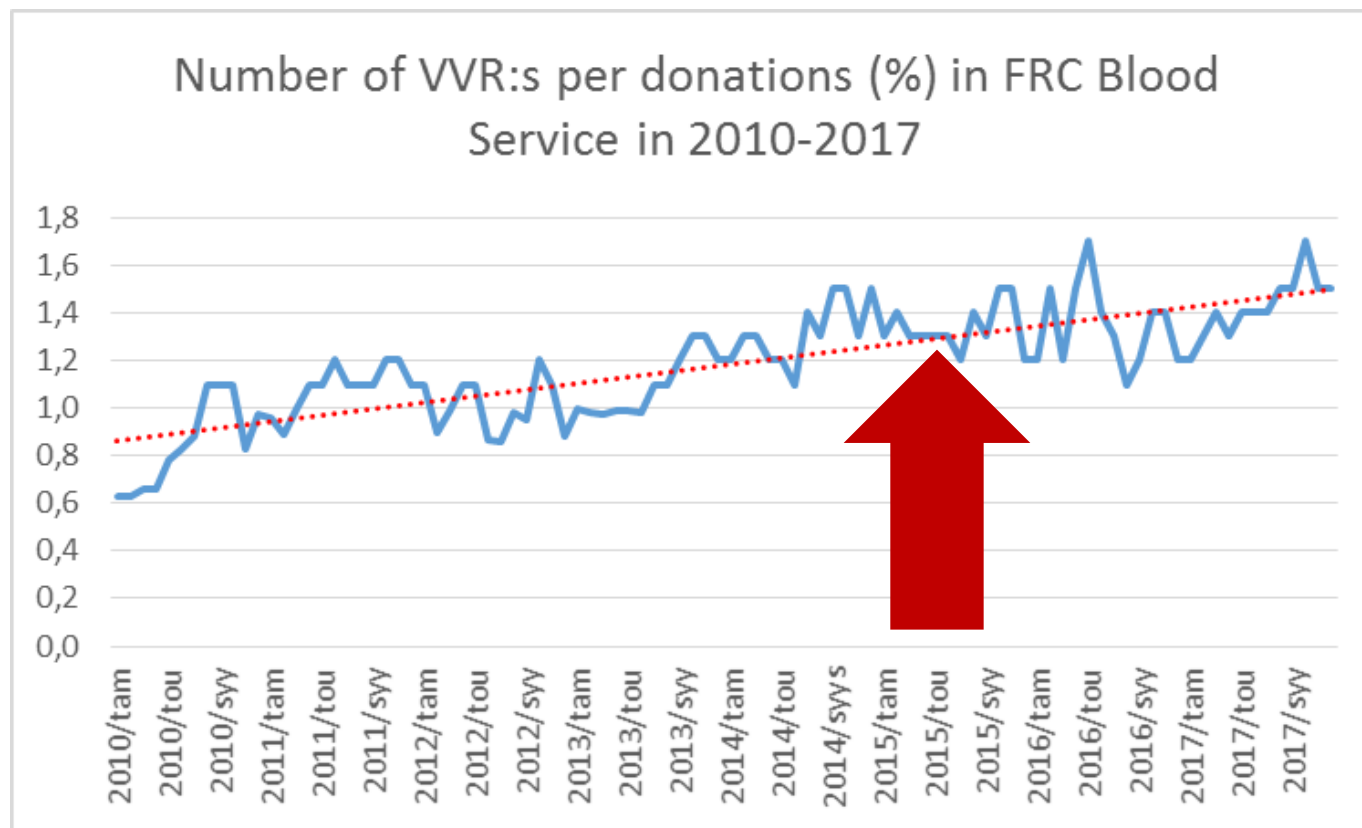
- Handouts + information from the nurse taking care of donor:
 - drink 1-2 glasses of water/juice or coffee before the donation
 - muscle pumping is a good thing for you 😊 (AMT)
- Targeted training efforts



... do you think we have done our job well?



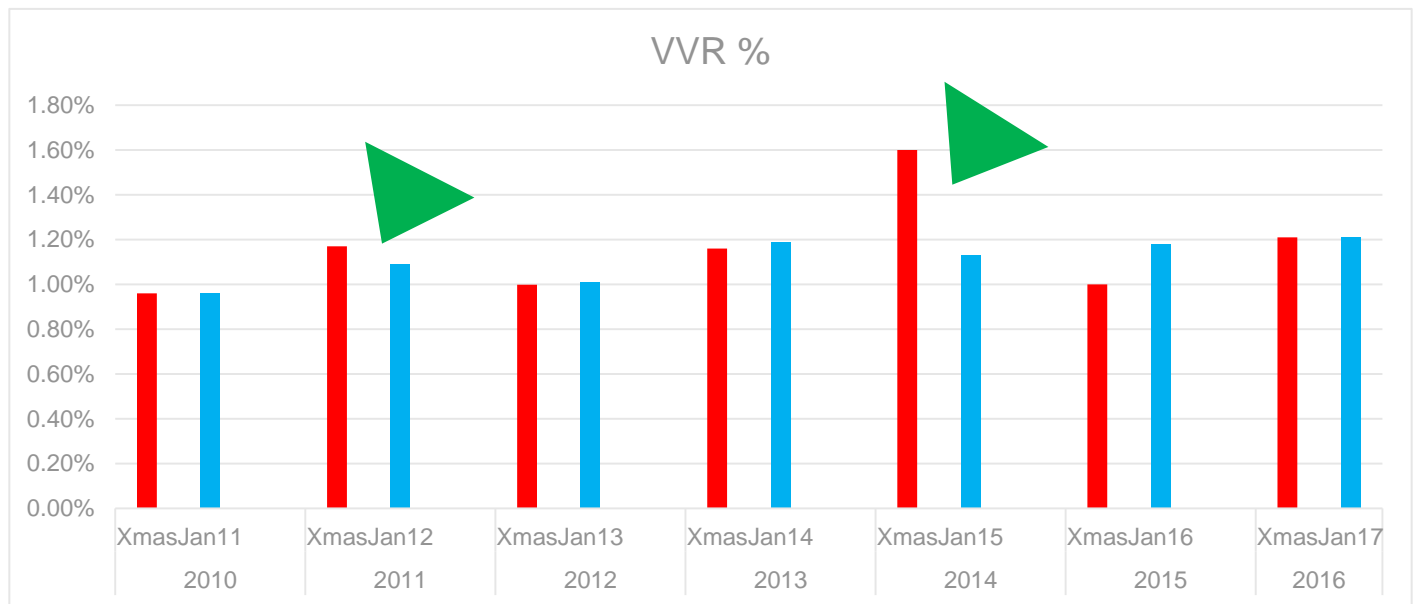
2015: Special training; Reduction of VVR:s as main medical subject in the annual obligatory training day for nurses



2016: Nurses told us... and it made sense... Xmas-effect

- During Xmas weeks we always reach the maximum number of collections
 - Lot of work and feelings of hurry
 - Long waiting times for donors
- > this have to have a negative impact on donor safety -> increased VVR rates?

-> but based on adverse event data only in 2 out of 7 years VVR rate in Xmas was higher than in Jan?



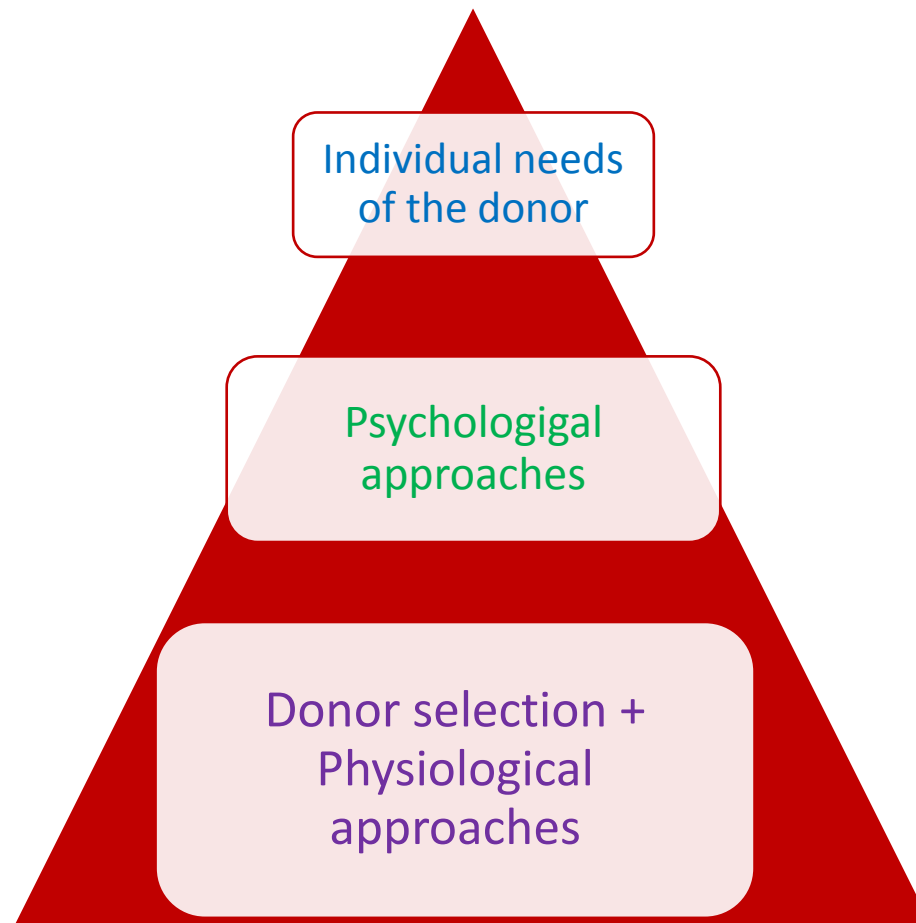
2018: Focus group interview by a sociologist

- Two focus groups
 - A) Nurses with regular orientation training + targeted "How to reduce VVR:s" training session in 2015
 - B) Nurses with regular orientation training
- Study questions
 - 1) Any difference between group 1 and 2 in theoretical knowledge concerning effective methods in reducing VVR:s?
 - 2) Nurses attitudes / practical understanding concerning risk factors of VVR:s – and methods to reduce them?

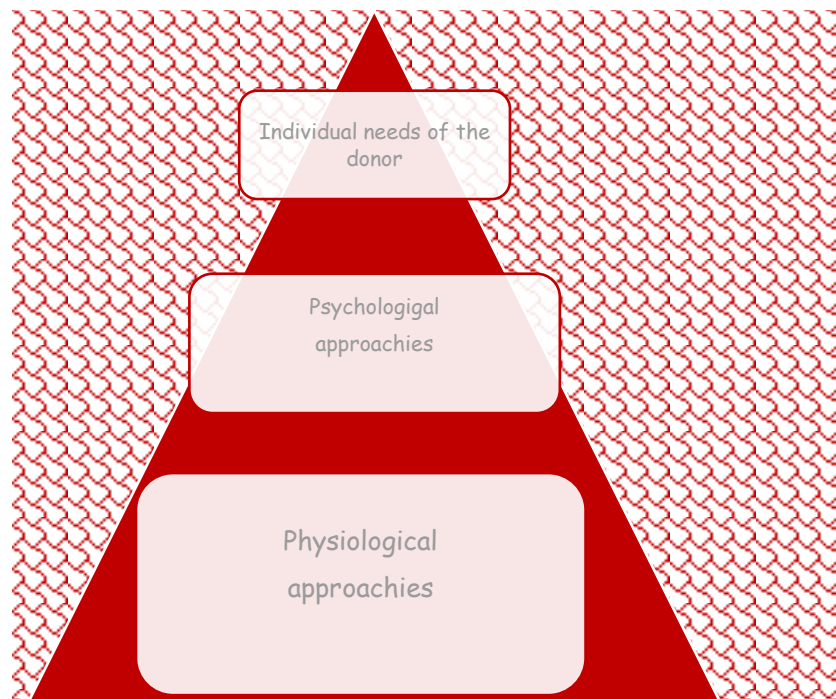
Results

1. No differences: the theoretical level of knowlegde concerning physiological methods was high in both groups, but not concerning the psychological
- 2.1. The nurses were familiar with known risk groups
- 2.2. Experience; **talking about fearness is effective**
- 2.3. The most important factor is "the evaluation" / "scanning of donors behaviour and body language", encountering the donor
- 2.4. Not only the **hurry / lack of time** of the staff but also **of the donor** is a risk factor

VVR:s - how can we reduce them?



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thank you



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