

Aortic valve surgery

The patient perspective

Johanna JM Takkenberg
Erasmus University Medical Center
Rotterdam, NL

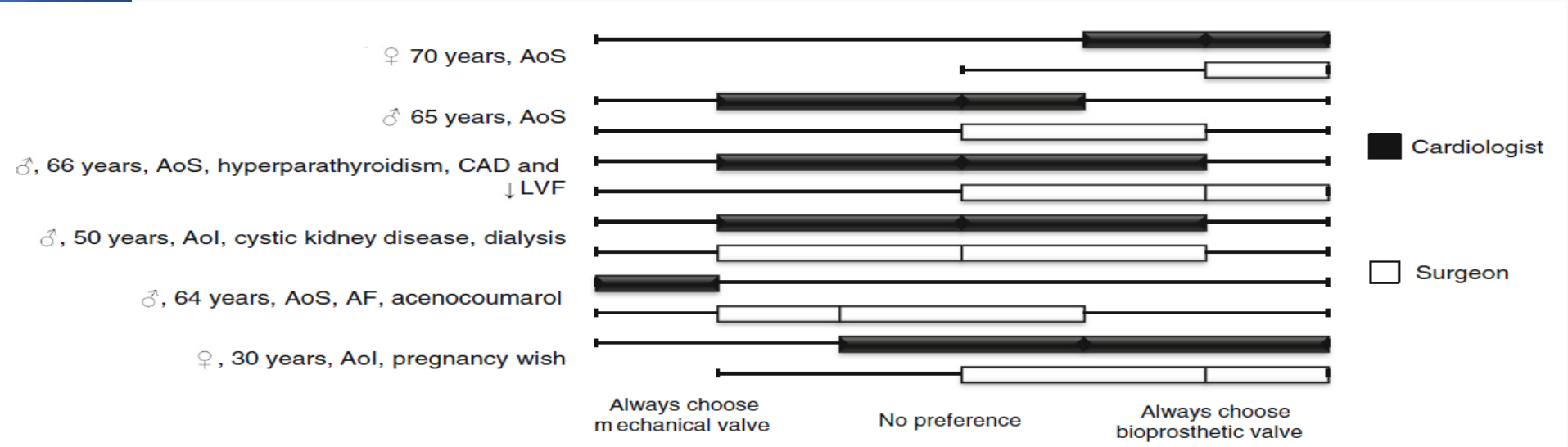
Reconstruction of the Aortic Valve and Root: A practical approach
Homburg / Saar, 7 September 2022



This presentation

- The cardiologist and surgeon perspective on prosthetic heart valve selection
- QOL
- The emerging role of the patient in clinical decision making
- How do patients experience prosthetic heart valve selection?
- Tools to implement shared decision making in choosing the optimal HVD therapy
- Take home message

The cardiologist and surgeon perspective on prosthetic heart valve selection



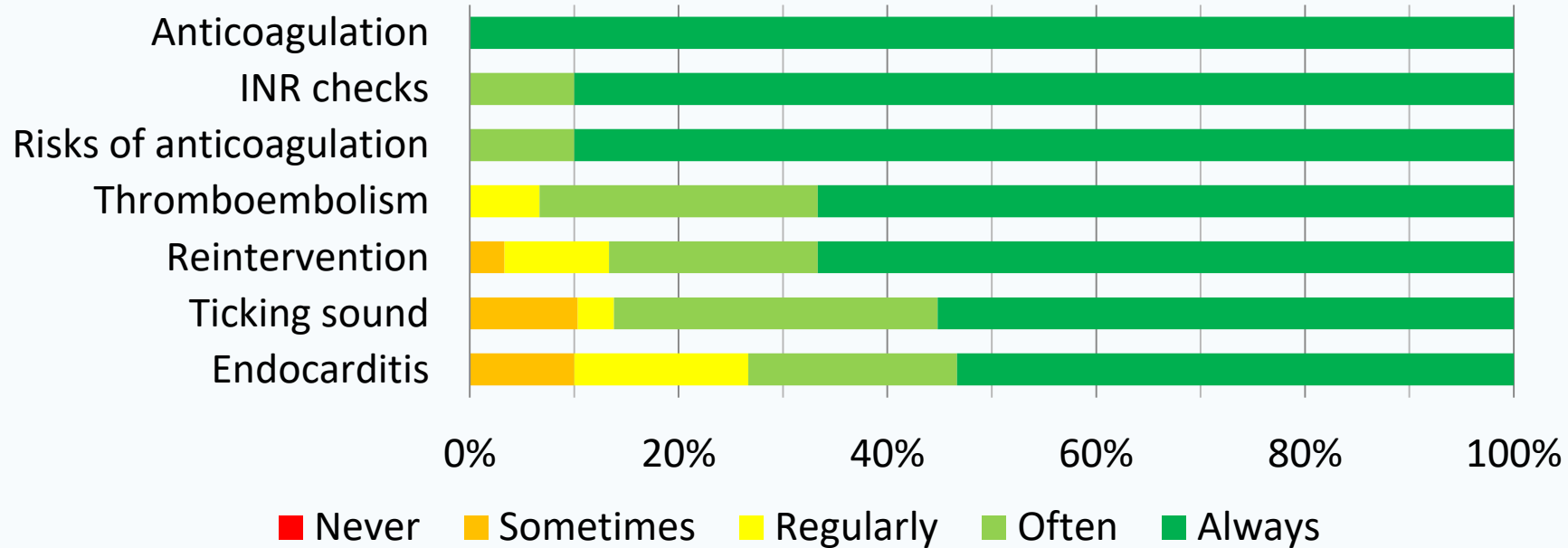
- Doctor's preferences vary widely!

Cardiologist and cardiac surgeon view on decision-making in prosthetic aortic valve selection: does profession matter?

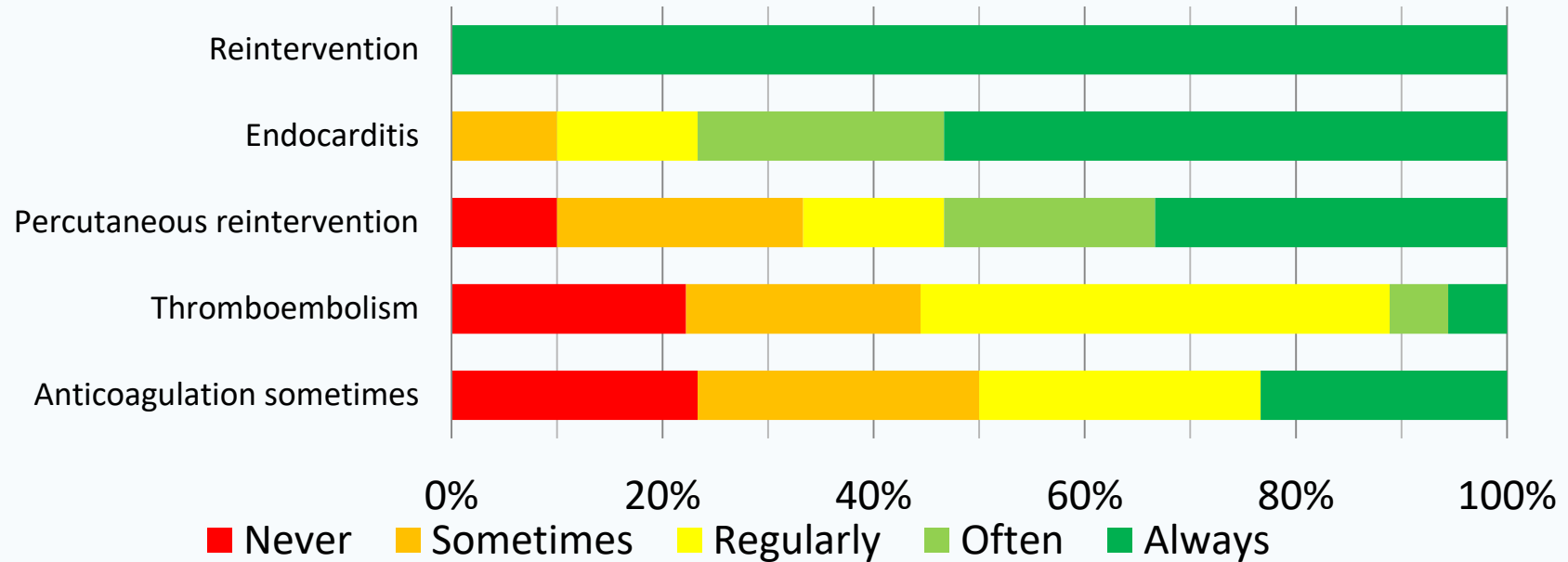
N. M. Korteland • J. Kluin • R. J. M. Klautz •
J. W. Roos-Hesselink • M. I. M. Versteegh •
A. J. J. C. Bogers • J. J. M. Takkenberg

Neth Heart J 2014

What do you tell patients about mechanical valve replacement?



What do you tell patients about biological valve replacement?



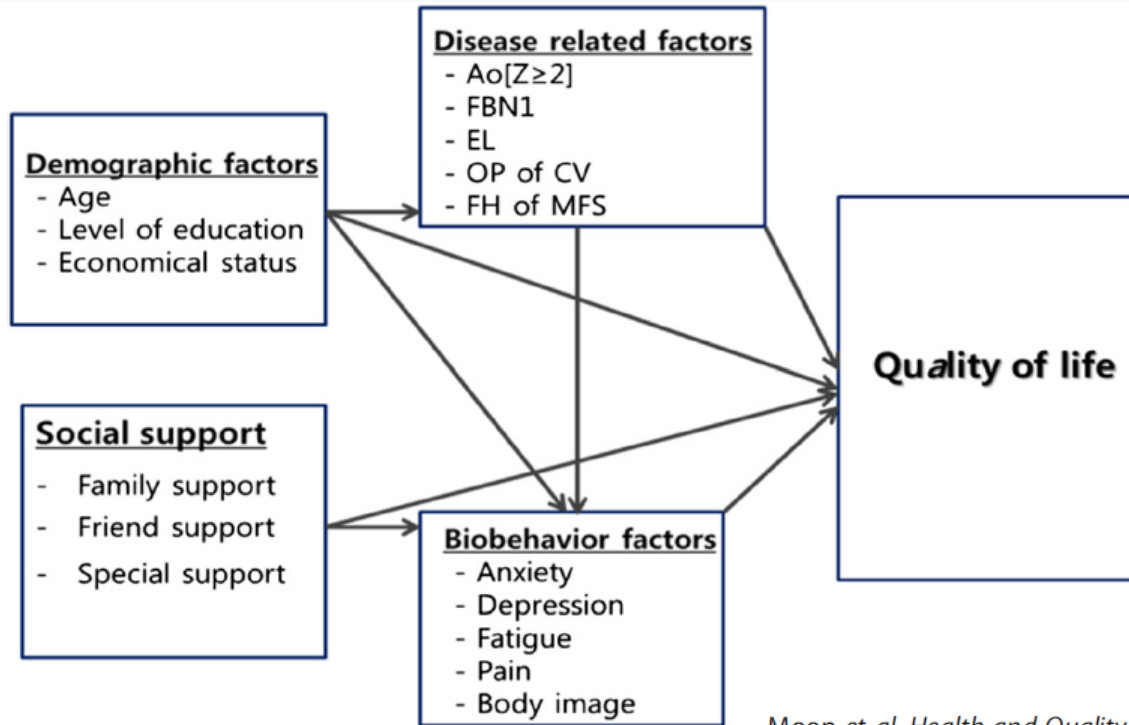
Cardiologist and surgeon perspectives:

- Doctors have preferences that vary widely
- Doctors often provide selective information about prosthetic heart valves
- But life is more than risks, how about QOL?



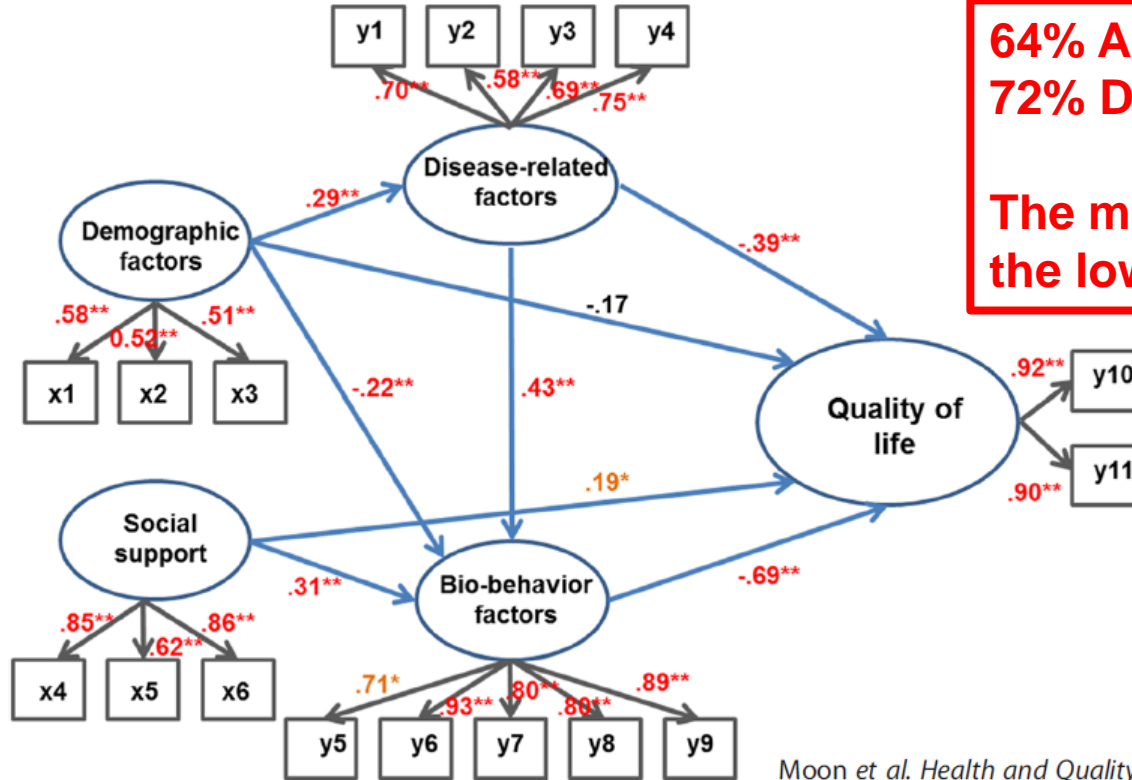


Conceptual framework for QOL in Marfan syndrome



Moon et al. *Health and Quality of Life Outcomes* (2016) 14:83
DOI 10.1186/s12955-016-0488-5

Path diagram for QOL in Marfan syndrome

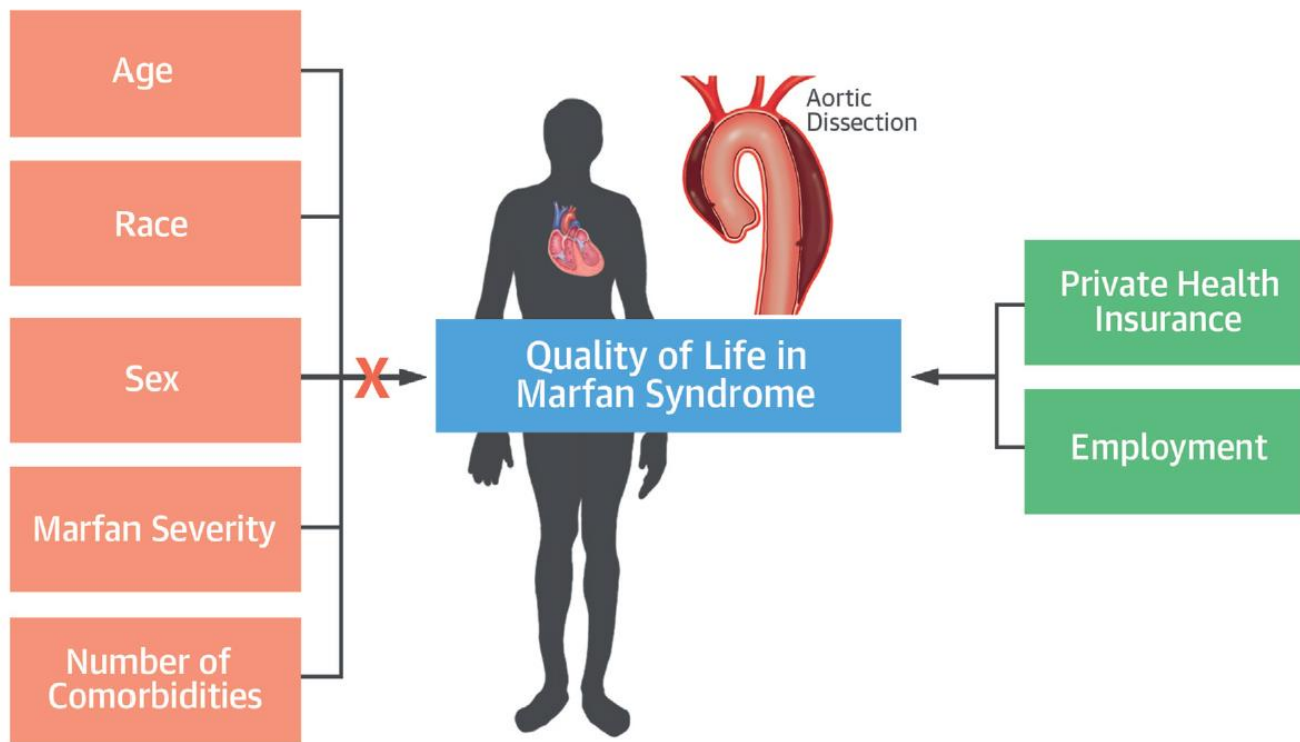


64% Anxious
72% Depressed

**The more surgeries,
the lower QOL**

Moon et al. *Health and Quality of Life Outcomes* (2016) 14:83
DOI 10.1186/s12955-016-0488-5

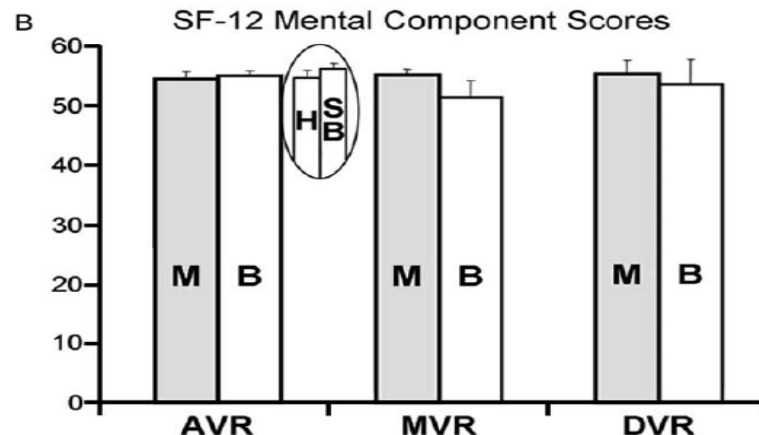
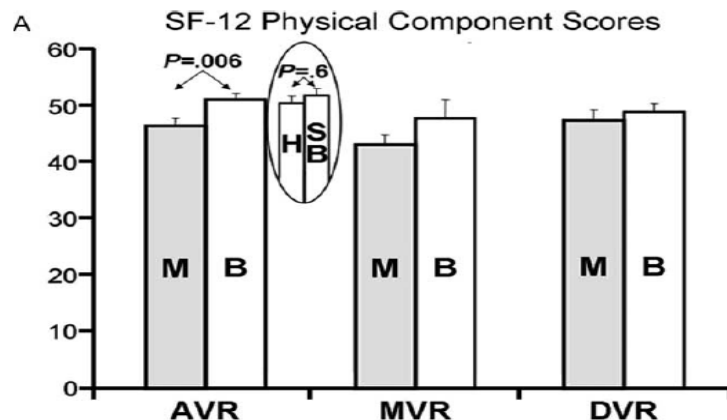
Health-related QOL in Marfan Syndrome is **below the norm** (GENTAC)



Goldfinger, J.Z. et al. J Am Coll Cardiol. 2017;69(23):2821-30.

Long-term outcomes of valve replacement with modern prostheses in young adults[☆]

Marc Ruel^{a,b,*}, Alexander Kulik^a, Buu K. Lam^a, Fraser D. Rubens^a, Paul J. Hendry^a, Roy G. Masters^a, Pierre Bédard^a, Thierry G. Mesana^a



“Late outcomes of modern prosthetic valves in young adults remain suboptimal. **Bioprostheses deserve consideration** in the aortic position, as **mechanical valves** are associated with **lower physical capacity, a higher prevalence of disability, and poorer disease perception**”

European Journal of Cardio-thoracic Surgery 27 (2005) 425-433

Quality of life after aortic valve surgery: Replacement versus reconstruction

Diana Aicher, MD,^a Annika Holz,^a Susanne Feldner, MD,^a Volker Köllner, MD,^b and Hans-Joachim Schäfers, MD^a

- AV repair/Ross vs mechanical AVR associated with:
 - Better physical functioning, general and mental health
 - Less bothered by valve sound
 - Less bothered by doctor visits and blood tests
 - Less concerned about possible bleeding
 - Surprisingly: slightly less worried about possible valve failure

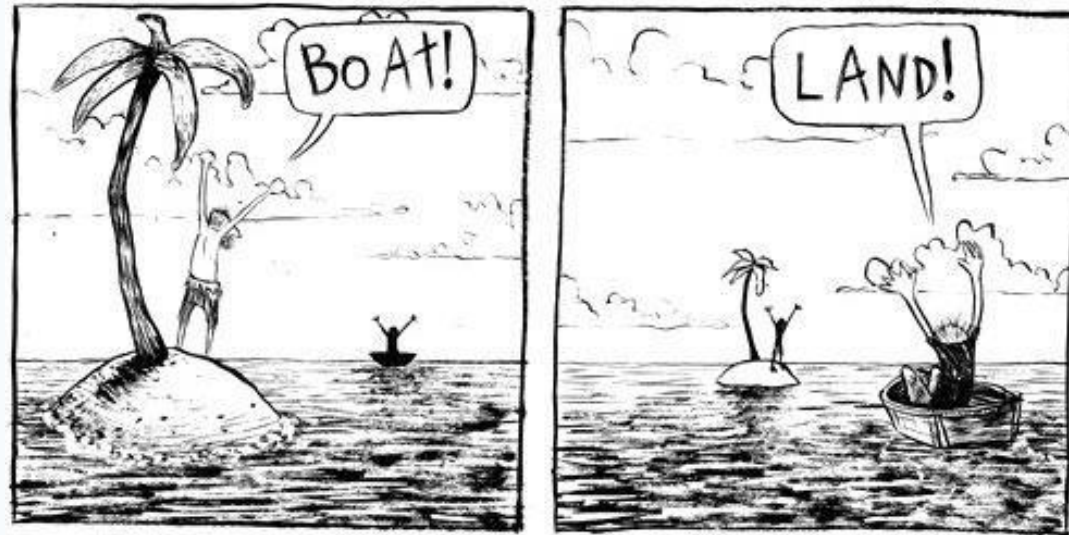
(J Thorac Cardiovasc Surg 2011;142:e19-24)

Quality of life after aortic valve repair is similar to Ross patients and superior to mechanical valve replacement: a cross-sectional study

Pavel Zacek^{1*†}, T. Holubec^{2†}, M. Vobornik¹, J. Dominik¹, J. Takkenberg³, J. Harrer¹ and J. Vojacek¹

Zacek et al. *BMC Cardiovascular Disorders* (2016) 16:63
DOI 10.1186/s12872-016-0236-0

Prosthetic valve selection is value sensitive



Recommendations for prosthetic valve selection (1)

Recommendations	Class	Level
<i>Mechanical prostheses</i>		
A mechanical prosthesis is recommended according to the desire of the informed patient and if there are no contraindications to long-term anticoagulation.*	I	C
A mechanical prosthesis is recommended in patients at risk of accelerated SVD.**	I	C
A mechanical prosthesis should be considered in patients already on anticoagulation because of a mechanical prosthesis in another valve position.	IIa	C

* Increased bleeding risk because of comorbidities, adherence concerns or geographic, lifestyle or occupational conditions.

** Young age (<40 years), hyperparathyroidism, haemodialysis.

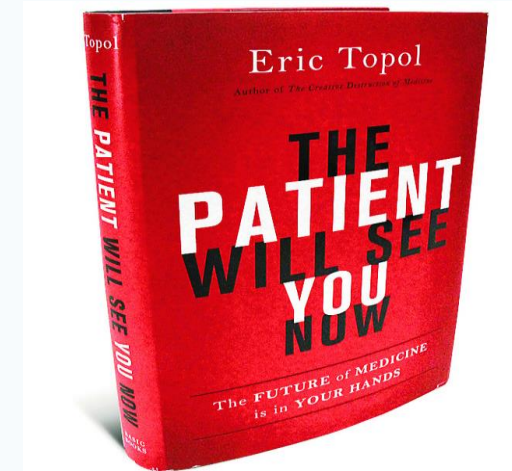
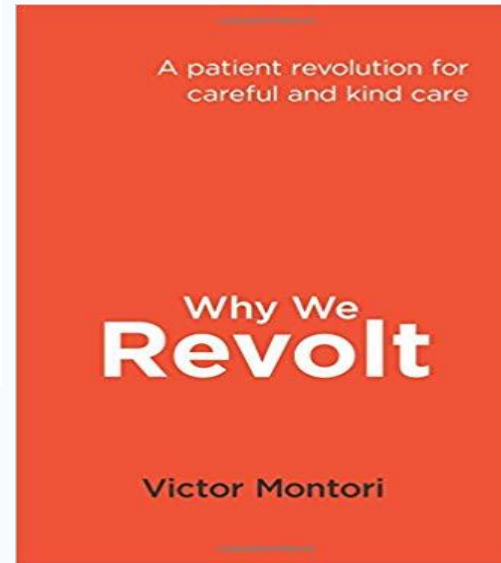
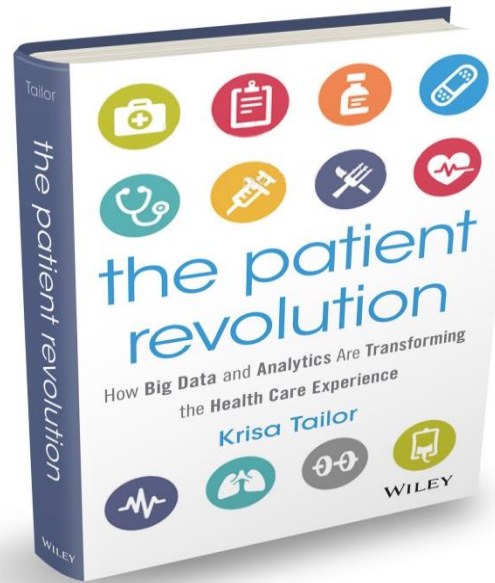
Recommendations for prosthetic valve selection (3)

Recommendations	Class	Level
Biological prostheses		
A bioprosthesis is recommended according to the desire of the informed patient.	I	C
A bioprosthesis is recommended when good-quality anticoagulation is unlikely (adherence problems, not readily available), contraindicated because of high bleeding risk (previous major bleed, comorbidities, unwillingness, adherence problems, lifestyle, occupation) and in those patients whose life expectancy is lower than the presumed durability of the bioprosthesis.*	I	C
A bioprosthesis is recommended in case of reoperation for mechanical valve thrombosis despite good long-term anticoagulant control.	I	C

* Life expectancy should be estimated at >10 years according to age, sex, comorbidities, and country-specific life expectancy.

Patient perspectives.....





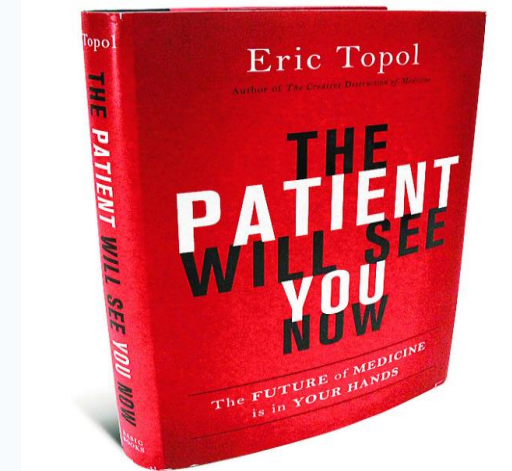
Patient engagement is here to stay



Informed patient preferences

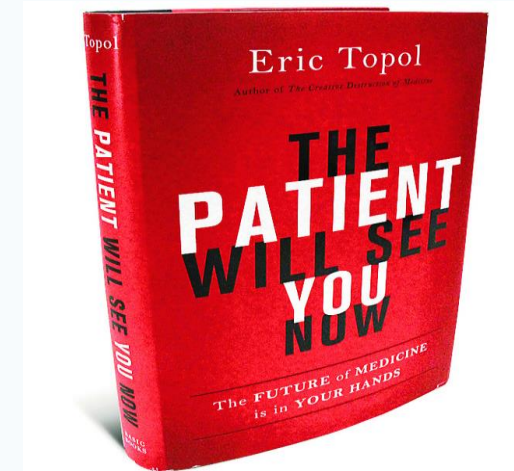
- ↑ Conservative treatment selection
- ↑ Patient involvement
- ↑ Patient knowledge
- ↑ Agreement patient values and choice
- ↓ Regret

- ? ↓ Health care costs ?



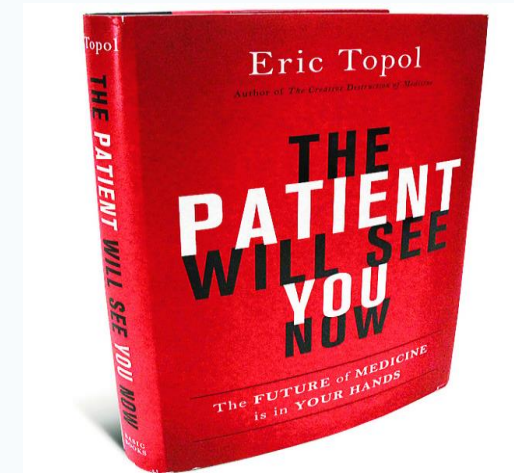
What do patients want?

- Most patients want to be informed
- As soon as patients are well informed, they want to be actively involved in the management of their disease



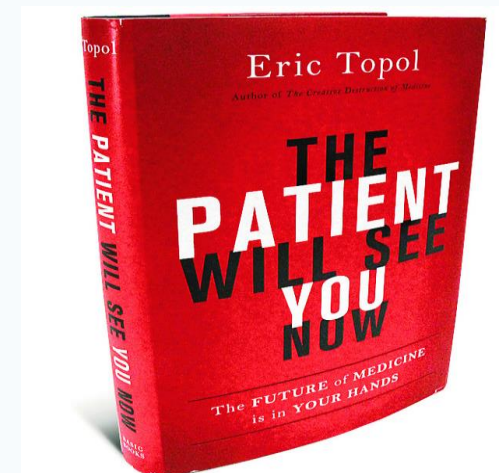
What do patients want?

- Most patients want to be informed
- As soon as patients are well informed, they want to be actively involved in the management of their disease
- Challenges:
 - Doctors think they are good at assessing patients' preferences, but they actually suck at this.....



What do patients want?

- Most patients want to be informed
- As soon as patients are well informed, they want to be actively involved in the management of their disease
- Challenges:
 - Doctors think they are good at assessing patients' preferences, but they actually suck at this.....
 - **Patients have difficulties in understanding their disease and simple health statistics**



Three simple questions

A person taking Drug A has a 1% chance of having an allergic reaction.

If 1,000 people take Drug A, how many would you expect to have an allergic reaction?

10 persons out of 1,000

70% correct

A person taking Drug B has a 1 in 1,000 chance of an allergic reaction.

What percent of people taking Drug B will have an allergic reaction?

0.1%

25% correct

Imagine that I flip a coin 1,000 times.

What is your best guess about how many times the coin would come up heads in 1,000 flips?

500 times out of 1,000

76% correct

PSPI 2008 Volume 8;2:53-96

Helping Doctors and Patients Make Sense of Health Statistics

Gerd Gigerenzer,^{1,2} Wolfgang Gaissmaier,^{1,2} Elke Kurz-Milcke,^{1,2} Lisa M. Schwartz,³ and Steven Woloshin³

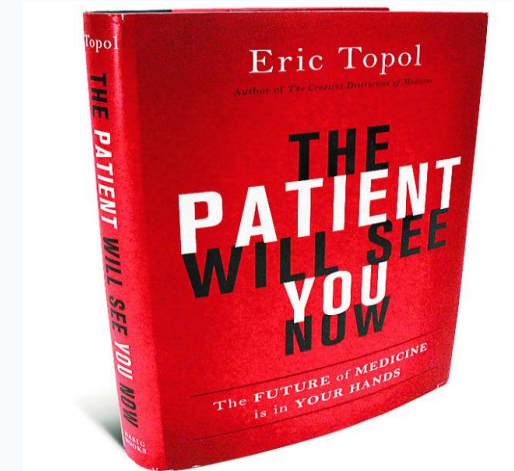
¹Max Planck Institute for Human Development, Berlin; ²Harding Center for Risk Literacy, Berlin; ³The Dartmouth Institute for Health Policy and Clinical Practice's Center for Medicine and the Media, Dartmouth Medical School

Only 72% of doctors is able to answer all 3 questions correctly!!!

PSPI 2008 Volume 8;2:53-96

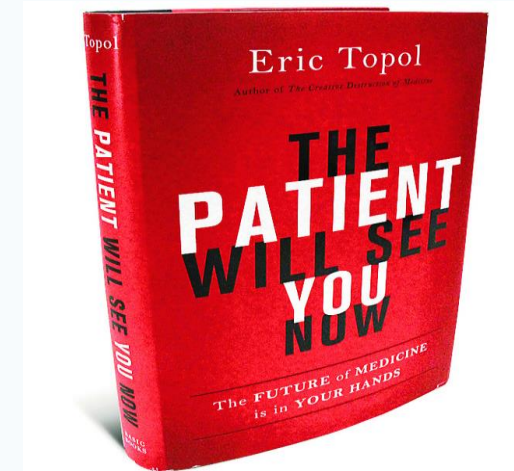
What do patients want?

- Most patients want to be informed
- As soon as patients are well informed, they want to be actively involved in the management of their disease
- Challenges:
 - Doctors think they are good at assessing patients' preferences, but they actually suck at this.....
 - Patients have difficulties in understanding their disease and simple health statistics
 - **Doctors often provide selective information**



What do patients want?

- Most patients want to be informed
- As soon as patients are well informed, they want to be actively involved in the management of their disease
- Challenges:
 - Doctors think they are good at assessing patients' preferences, but they actually suck at this.....
 - Patients have difficulties in understanding their disease and simple health statistics
 - Doctors often provide selective information
 - **Doctors have preferences too.....**



How do patients experience valve selection?

- Prospective cohort study of 132 patients undergoing AVR:
 - Decisional conflict in 56% (severe in 25%)
 - 68% wanted to be involved in decision making
 - Only 53% felt involved
 - Basic knowledge of disease and treatment sufficient in 69%
 - Limited numeracy: 56%



**Prosthetic aortic valve selection:
current patient experience, preferences
and knowledge** *Open Heart* 2015;**2**

Nelleke M Korteland,¹ Frans J Bras,² Fabienne M A van Hout,³ Jolanda Kluin,²
Robert J M Klautz,³ Ad J J C Bogers,¹ Johanna J M Takkenberg¹

Does the Use of a Decision Aid Improve Decision Making in Prosthetic Heart Valve Selection?

A Multicenter Randomized Trial

Nelleke M. Korteland; Yunus Ahmed; David R. Koolbergen, MD, PhD; Marjan Brouwer; Frederiek de Heer, MSc; Jolanda Kluijn, MD, PhD; Eline F. Bruggemans, MSc; Robert J.M. Klautz, MD, PhD; Anne M. Stiggelbout, PhD; Jeroen J.J. Bux, MD, PhD; Jolien W. Roos-Hesselink, MD, PhD; Peter Polak, MD; Thanasia Markou, MD; Inge van den Broek; Rene Ligthart; Ad J.J.C. Bogers, MD, PhD; Johanna J.M. Takkenberg, MD, PhD



The screenshot shows the homepage of the 'Hartklepkeuzehulp' website. At the top, there is a navigation menu with 'Home', 'Praktische informatie', 'Hartklepkeuzehulp', and 'Over ons'. A search bar is located on the right. The main content area features a red heart icon and the title 'Hartklepkeuzehulp'. Below this, a welcome message states: 'Welkom op "Hartklepkeuze.nl". Deze site is bedoeld om u praktische informatie te bieden over hartklepafwijkingen, hartklepprothesen en de operatie. Daarnaast kunt u op deze website de "Hartklepkeuzehulp" doorlopen. Met behulp van deze keuzehulp leert u meer over de verschillende hartklepprothesen en wat dat voor u persoonlijk betekent. Zo kunt u goed geïnformeerd met uw arts een keuze maken.' To the right, under the heading 'Organisatie', it says: 'Hartklepkeuze.nl is een initiatief van de Nederlandse Vereniging voor Thoraxchirurgie, in samenwerking met de Nederlandse Vereniging voor Cardiologie, de Nederlandse Hartstichting en de Hart&Vaatgroep.' Below the text are two red buttons: 'Praktische informatie' and 'Hartklepkeuzehulp'. At the bottom, there are logos for the 'Nederlandse Vereniging voor Thoraxchirurgie', 'De Hart & Vaatgroep', 'Hartstichting', and 'Nederlandse Vereniging voor Cardiologie'.

Decisional conflict the same

Better knowledge

Better informed

Less anxiety and depression

Better mental quality of life

PCI Choice Decision Aid for Stable Coronary Artery Disease A Randomized Trial



Megan Coylewright, MD, MPH; Sara Dick, MS; Becky Zmolek, BSN; Jason Askelin, ADN;
Edward Hawkins, BSN; Megan Branda, MS; Jonathan W. Inselman, BA;
Claudia Zeballos-Palacios, MD; Nilay D. Shah, PhD; Erik P. Hess, MD, MSc;
Annie LeBlanc, PhD; Victor M. Montori, MD, MSc; Henry H. Ting, MD, MBA

(Circ Cardiovasc Qual Outcomes. 2016;9:767-776. DOI: 10.1161/CIRCOUTCOMES.116.002641.)

Decisional conflict the same

Better knowledge

Better informed

Developing a shared decision support framework for aortic root surgery in Marfan syndrome

Je hi Tom Treasure,¹ Annette King,² Loreto Hidalgo Lemp,³ Tal Golesworthy,⁴ John Pepper,⁵
Johanna JM Takkenberg⁶

Treasure T, et al. *Heart* 2017;0:1–7. doi:10.1136/heartjnl-2017-311598



Take home message

- Prosthetic valve selection
 - Value sensitive
 - Requires the consideration of risks and benefits AND informed patient preferences
 - Patients usually want to be informed and participate in treatment decision making
 - There are several challenges in doing so
- A patient decision aid to support prosthetic valve choice is effective
- More patient portals are underway
- Implementation of shared decision making in clinical practice will improve quality of decision making and care

