

Overview of medical issues for people as they are ageing

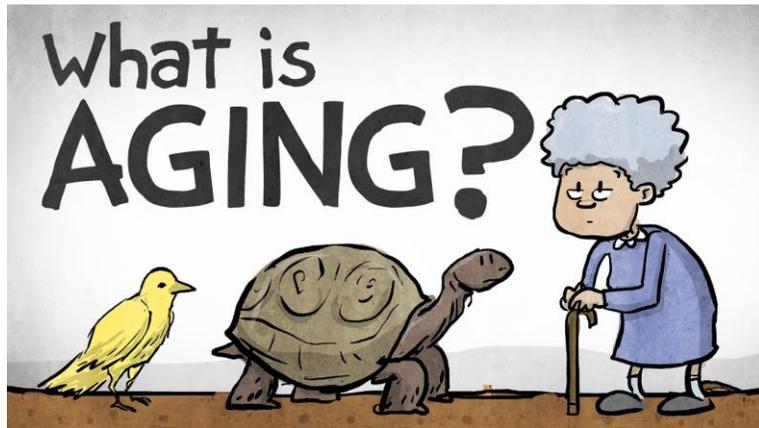
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Monash University

97 year old man with haemophilia A (25%)

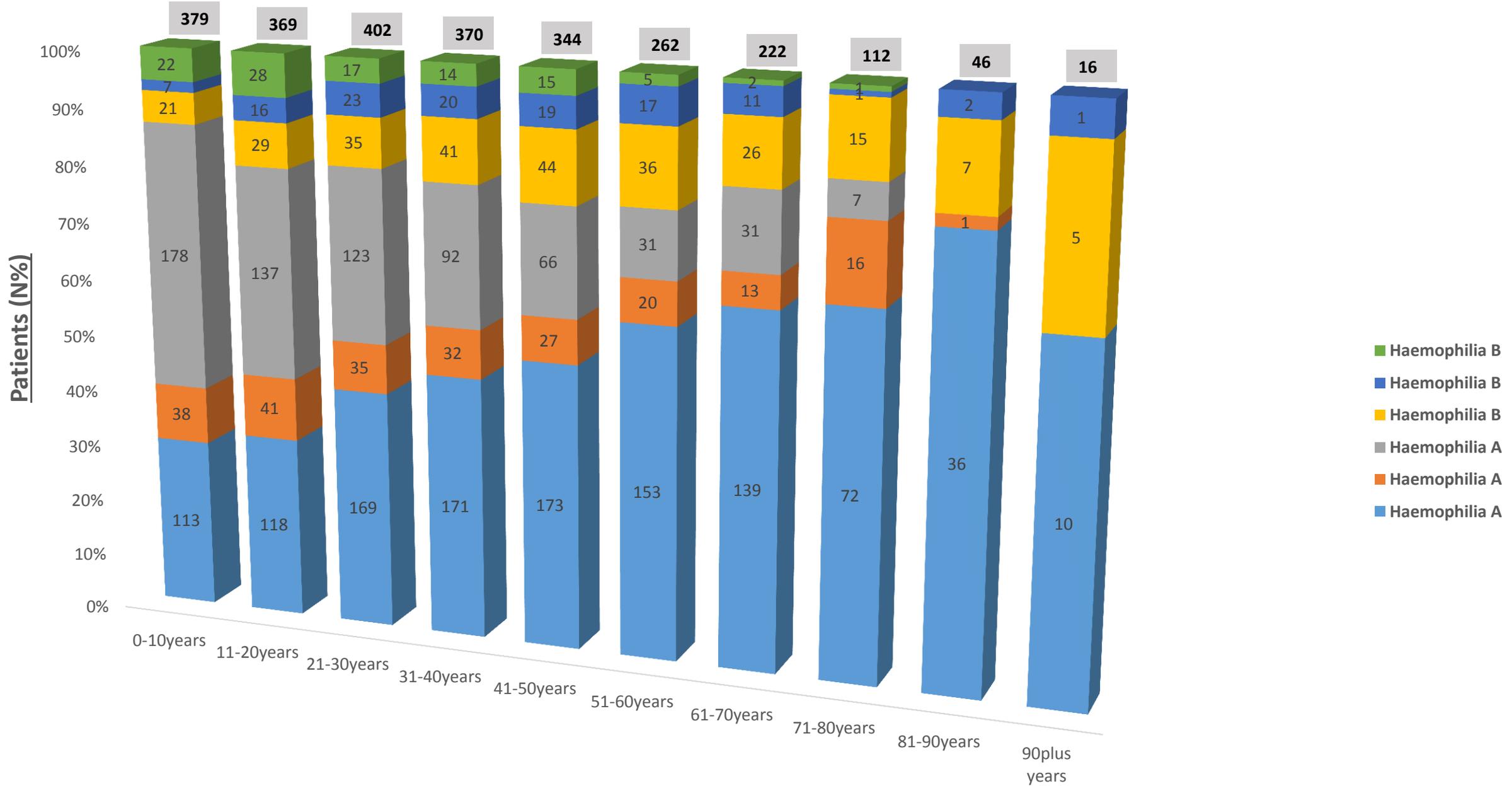
- WWII pilot
- Lives with son & independent of ADL
- Osteoarthritis
- Severe pulmonary hypertension
- Melanoma (2012)
- Rectal carcinoma
 - 2008 low resection & 2016 right hemicolectomy
- Benign prostatic hypertrophy – TURP
- Falls

Global ageing

- 2047 – more older persons than children
- 1998 – established nations surpassed this milestone

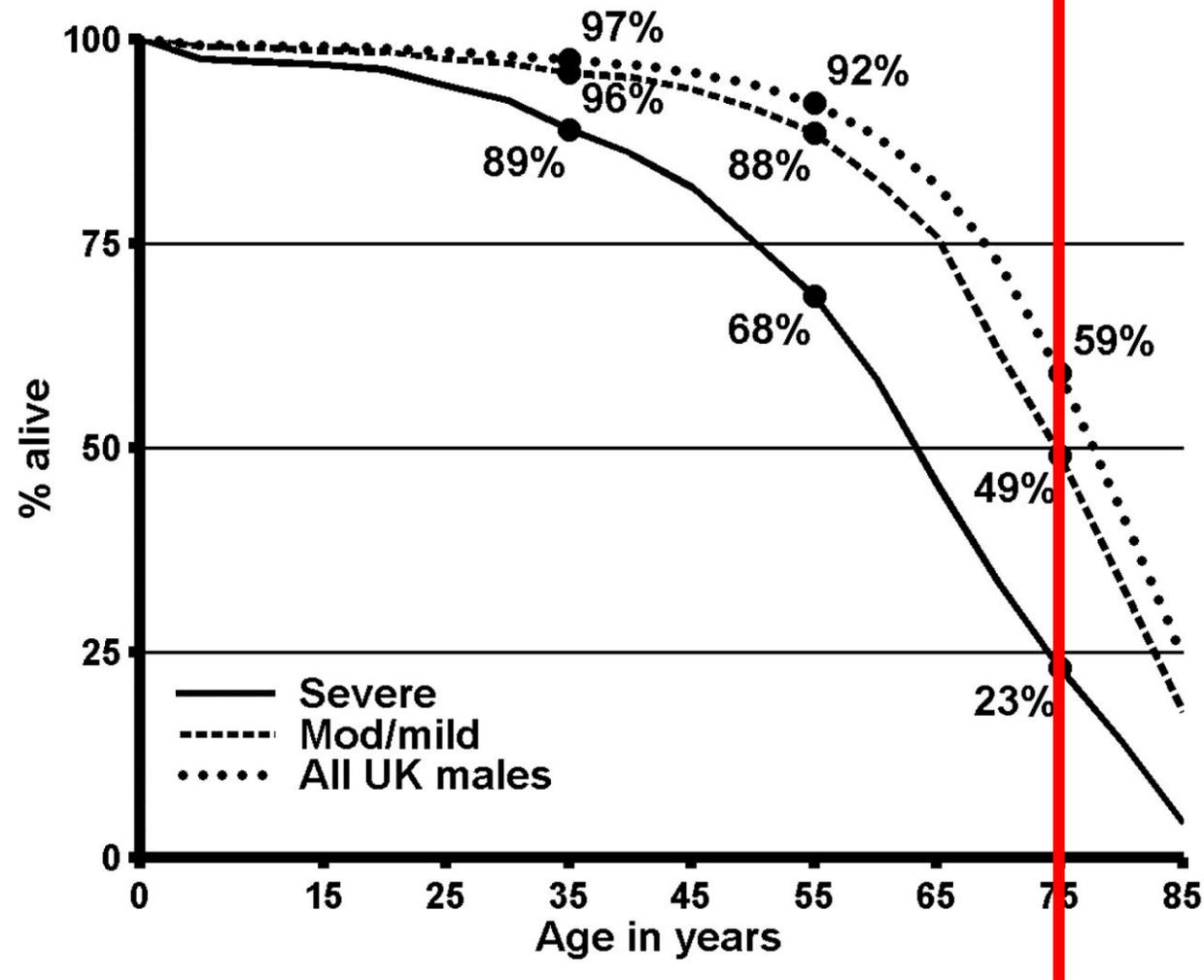


Haemophilia A & Haemophilia B patients (by AgeGroup, Severity)



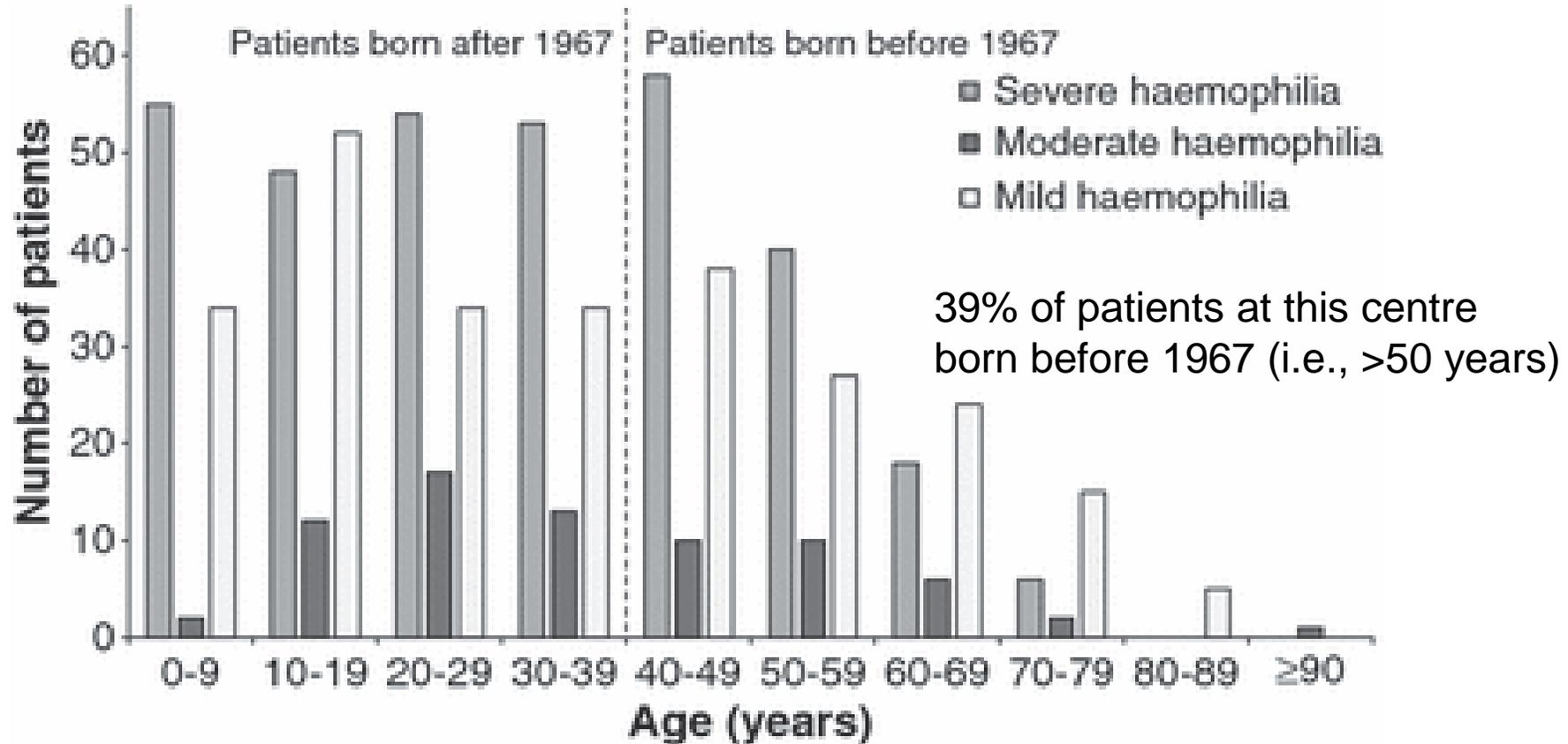
AgeGroup

Survival of men in UK with hemophilia not infected with HIV and in the general male population, 1999



Darby, S. C. et al. *Blood* 2007;110:815-825

Number of patients according to age and severity



Survival in haemophilia is enhanced by



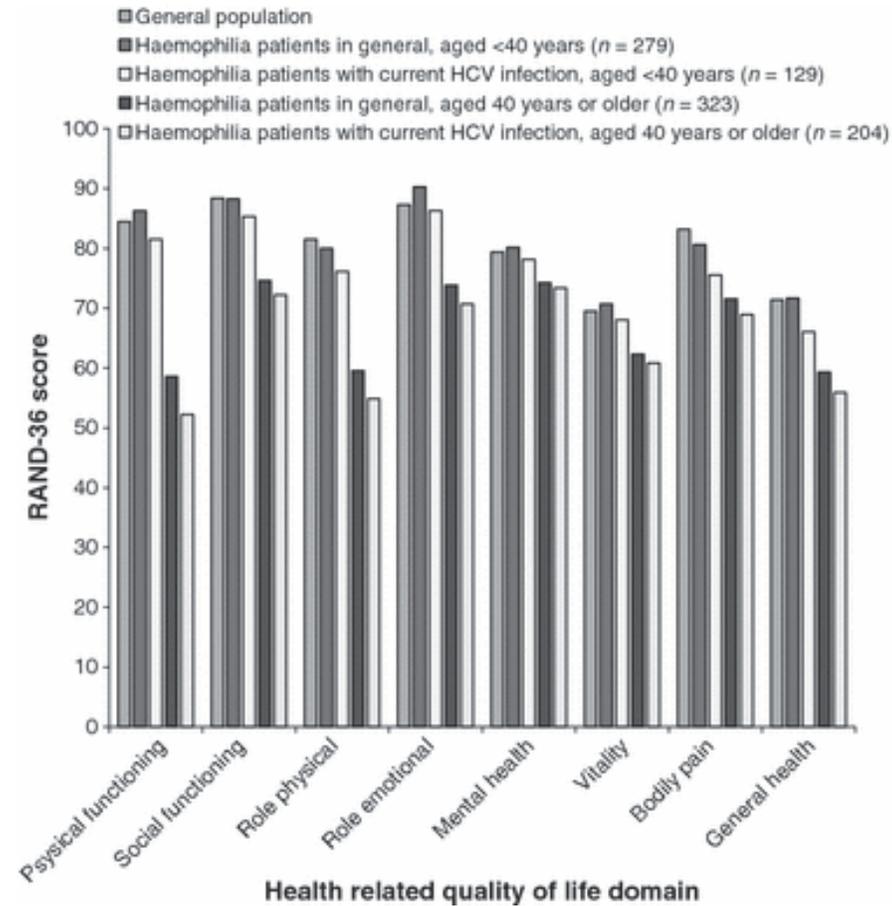
- Safe & effective factor **replacement therapy**
 - Prophylaxis
 - Normal lifestyle and employment prospects
 - Few restrictions on surgery
- **Comprehensive care**
 - – home treatment & prophylaxis

Haemophilia - Next 10 years for wealthy countries?

- New generation of young men with haemophilia who are unsure what a bleed is
- What is considered normal?
 - Sports limitation
 - Vocational choices
- Transition of care in adolescence
- Improved Inhibitor management
- Novel therapeutics
 - Long-acting factor concentrates & alternative therapies
 - Gene therapy
- **Haemophilia and Ageing**

Health-related **quality of life** among haemophilia patients >40-yrs vs. <40-yrs

RAND-36 questionnaire



Potential medical illnesses for ageing haemophilia patients

Haemophilia related

- Haemophilic arthropathy
- HIV infection
- Hepatitis C
- Chronic Inhibitor
- Chronic pain

Non-haemophilia related

- Cardiovascular disease
- Cancer
- Other
 - Hypertension, diabetes, lipids, obesity, kidneys, cataracts

Psycho-social

Quality of Life

Sexual health

Musculoskeletal disease - Haemophilia & non-haemophilia related

- Haemophilic arthropathy
 - Joint deformity & muscle weakness (mobility difficulties & pain)
 - Impaired proprioception (balance dysfunctions & falls)
- Osteoporosis
- Osteoarthritis

• **Rehabilitation and physical therapy**

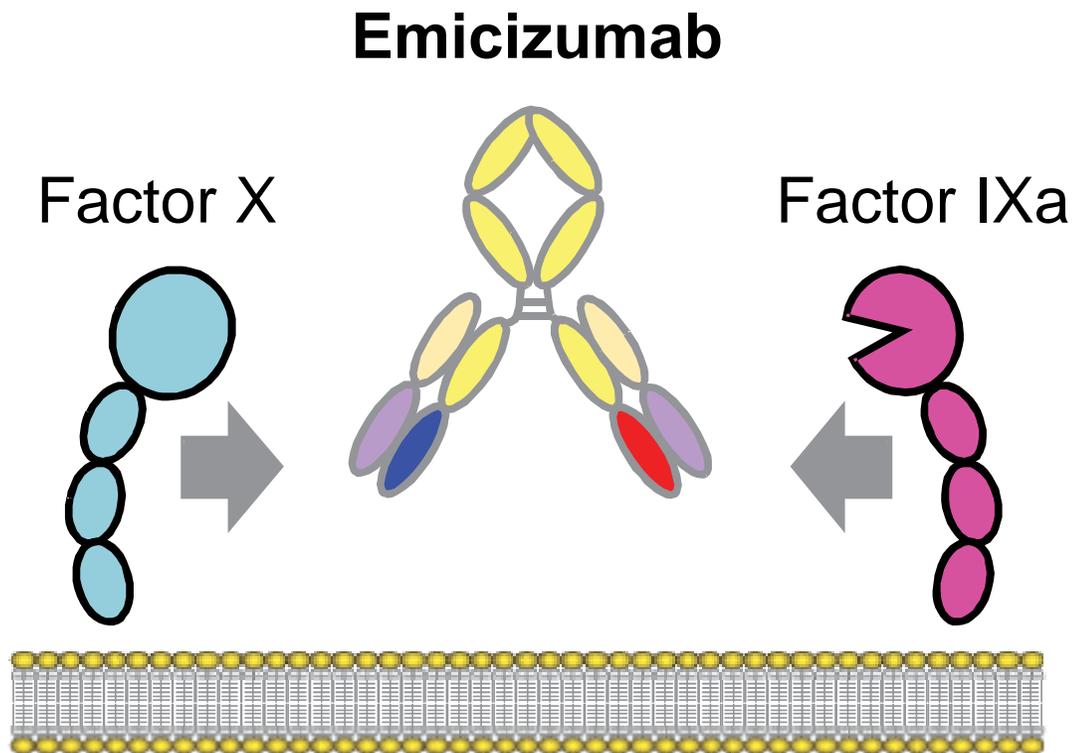
- Pain management
- Orthopaedic surgery
 - Degenerative more than haemophilic arthropathy



Hepatitis C

“The good news is Hepatitis C (hep C) can be cured for most people. The new medicines, known as direct-acting antivirals (DAAs) are taken orally, are more effective and have less side-effects. The number of weeks that you need to be on treatment has also reduced and this is likely to improve even further as more new drugs become available. The new medicines are effective in treating and curing hep C in more than 90% of people”

Novel therapy for patients with haemophilia A & Chronic inhibitors



- Novel humanized bispecific monoclonal antibody
- Bridges activated FIX (FIXa) and FX to restore function of missing FVIIIa
- No structural homology to FVIII – not expected to induce FVIII inhibitors or be affected by presence of inhibitors
- Administered **subcutaneously**

Once-weekly emicizumab prophylaxis administered subcutaneously

- **Reduction in bleed rate of 87% vs no prophylaxis**
 - 63% of patients randomized to emicizumab prophylaxis
 - 71% of patients previously on BPA prophylaxis experienced **zero bleeds**
- Substantial reduction in bleeds associated with clinically meaningful benefits in HRQoL and health status

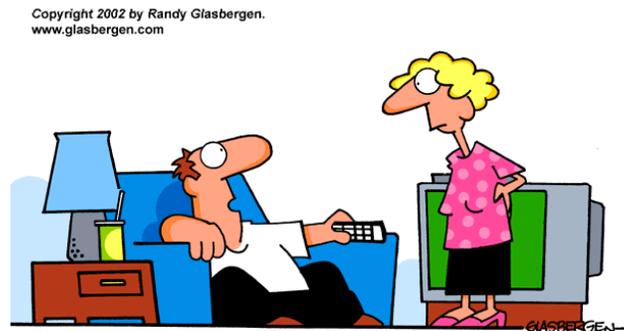
Common Ageing related ailments

- Obesity

- Adult Dutch haemophilia patients (1992-2001)

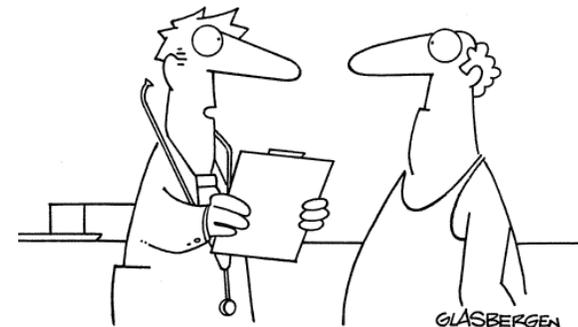
- BMI 25–30 kg m² increased from 27% to 35%
 - BMI > 30 kg m²) 4% to 8%

- Risk factor for diabetes, atherosclerosis, CVD, arthropathy



“My doctor told me to start my exercise program very gradually. Today I drove past a store that sells sweat pants.”

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“The handle on your recliner does not qualify as an exercise machine.”

Cardiovascular disease in haemophilia

- Risk of death from CVS vs. general population¹
 - Atherosclerosis similar to non-haemophilic patients²
 - Myocardial infarction rare among severe haemophilia
 - Hypocoagulable state is protective
 - Surrogate marker of intimal thickness is variable³
 - Link between intensive factor replacement and ACS⁴
- No specific guidelines
 - CFC with tailored antiplatelet therapy (with thromboprophylaxis)

¹Soucie *Blood* 2000; 96: 437-42

²Foley *J Thromb Haemost* 2010; 8: 208-11

³Bilora *Clin Appl Thrombosis Hemost* 2006; 12: 193-8

⁴Girolami A, Ruzzon E, Fabris F et al. *Acta Haematol* 2006; 116: 120-5



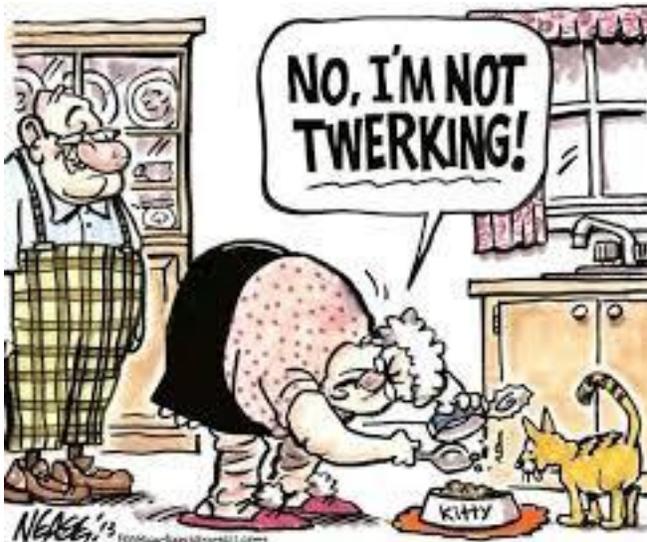
"An aspirin a day will help prevent a heart attack if you have it for lunch instead of a cheeseburger."

Cancer

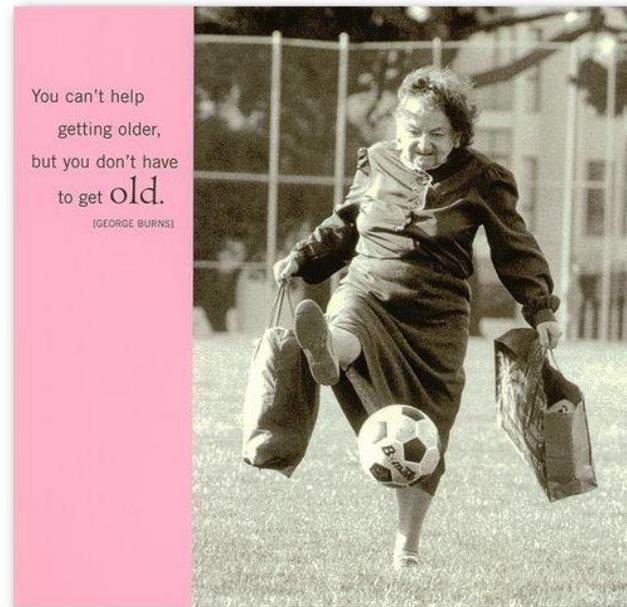
- **Ageing haemophilia patients will be as susceptible to developing common cancers** (prostate, colon, skin, lung)
 - **Surveillance important – Family Physician**
 - Mortality rates are same compared with general population
- Haemostatic support for diagnostic procedures & cancer surgery
- Risk of venous thrombosis
- Associated risk for haemorrhage
 - Thrombocytopenia & risk of bleeding with chemo-radiotherapy
- Liaison with oncology team & other multidisciplinary care groups

Psychological impact

- Decline in health
- Altered family dynamics
- Loss of employment
- Early retirement



- Positive aspects of ageing
 - Experience with overcoming haemophilia-related adversity during early years



Summary

- Significant improvements in haemophilia have led to a significant ageing population of persons with haemophilia
- Adult haemophilia patients are also susceptible to **non-haemophilia related** co-morbidities in latter life stages
- **Co-morbidities** may lead to functional limitations, psychosocial complaints, symptoms, societal problems, decrease QoL & **complex care**
- Haemophilia treatment centres remain an integral role in co-ordinating care
 - Maintain improved QoL and independence