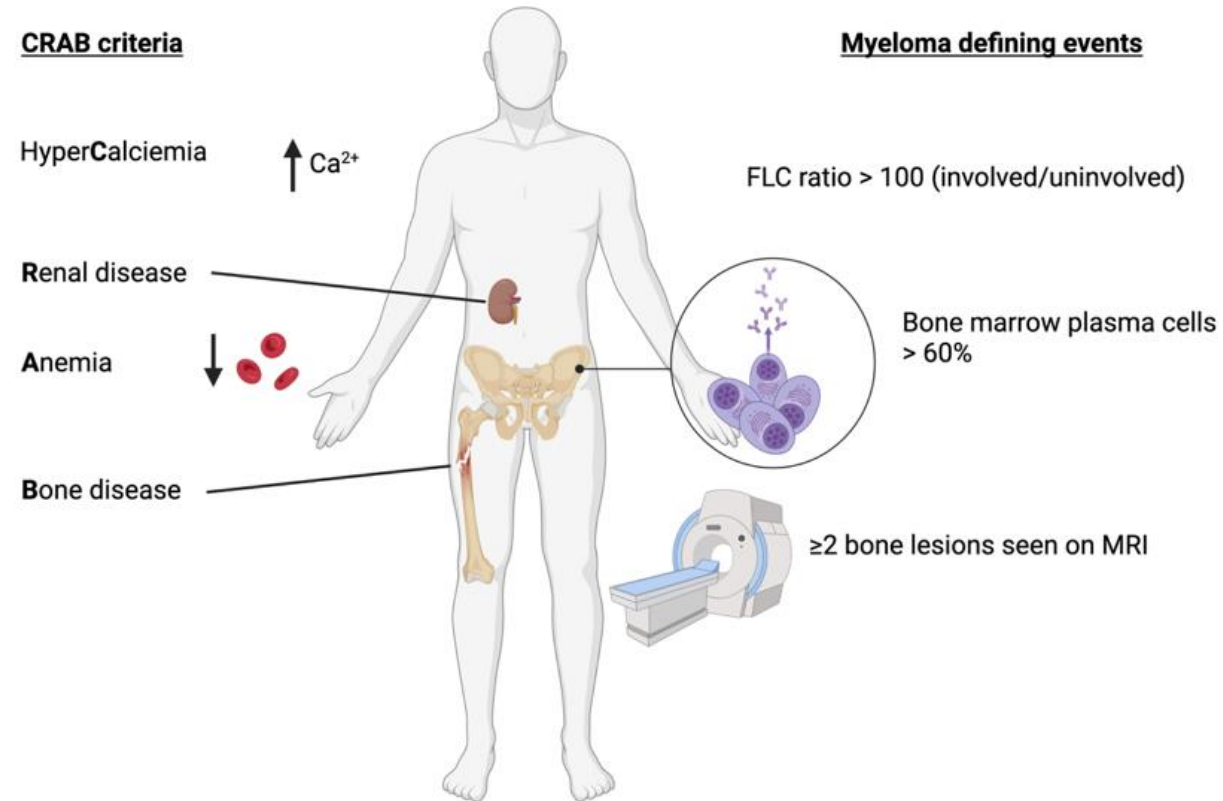


# Hvað er að fréttast af Blóðskimun?

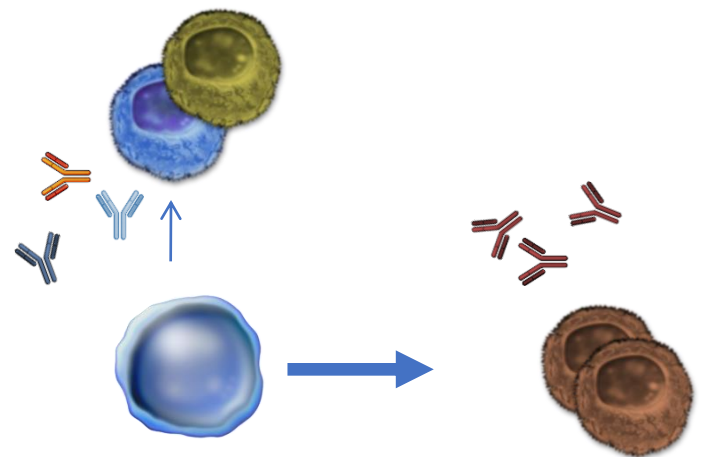
Sæmundur Rögnvaldsson

Læknir og nýdóktor

# Smá upprifjun

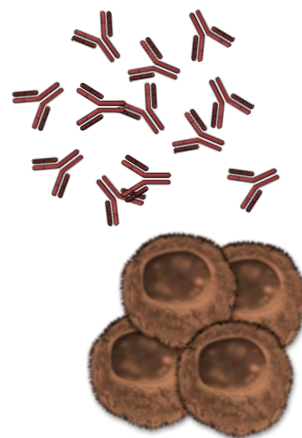


## Smá upprifjun



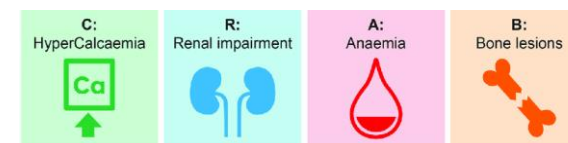
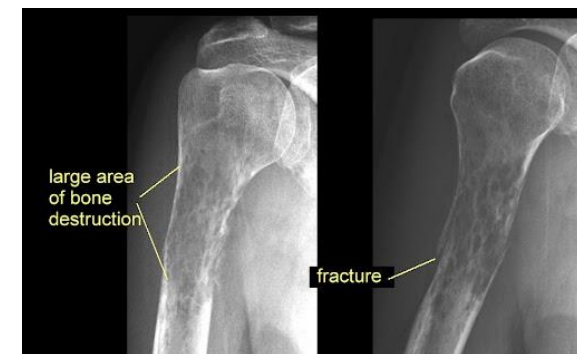
MGUS

- Algengt
- Einkennalaust
- 1% fá mergæxli á ári

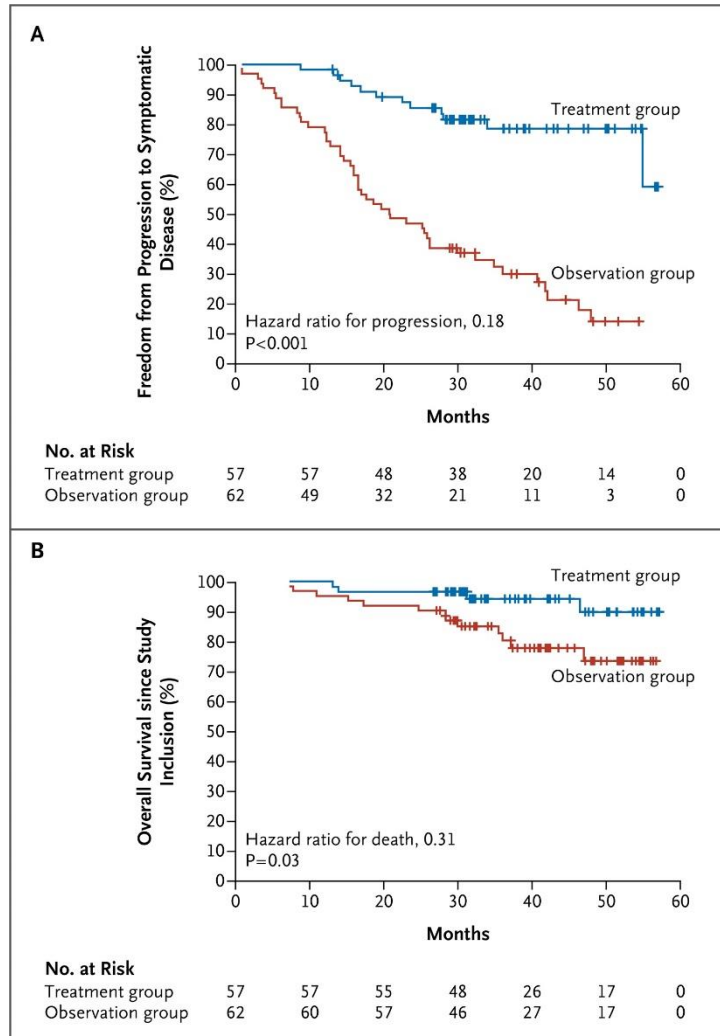


Mallandi  
mergæxli

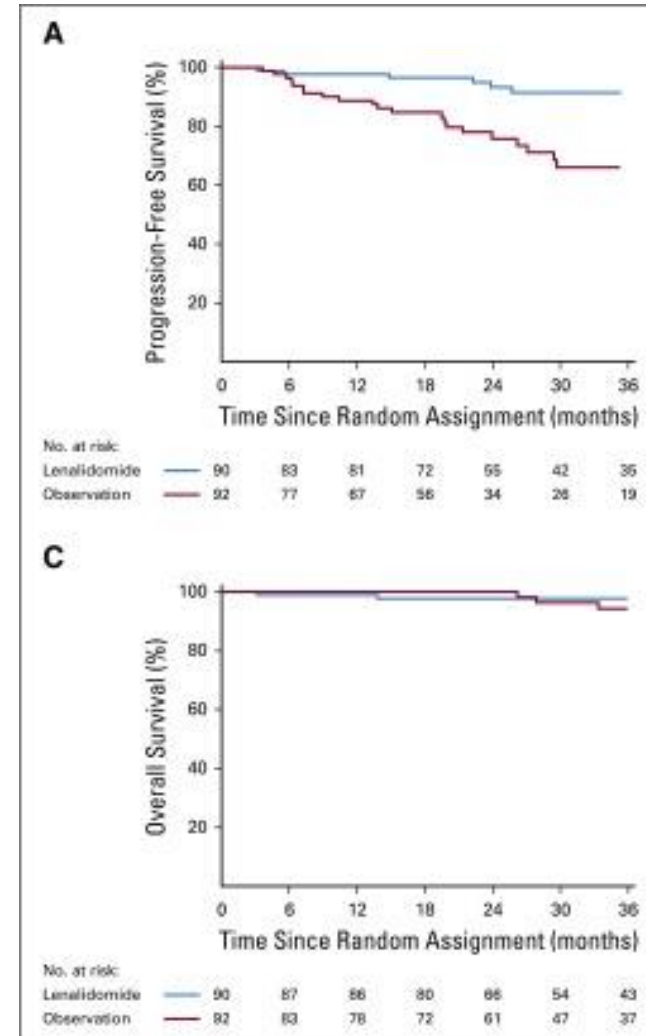
Meðferð?



# Getum við gripið fyrr inn í?

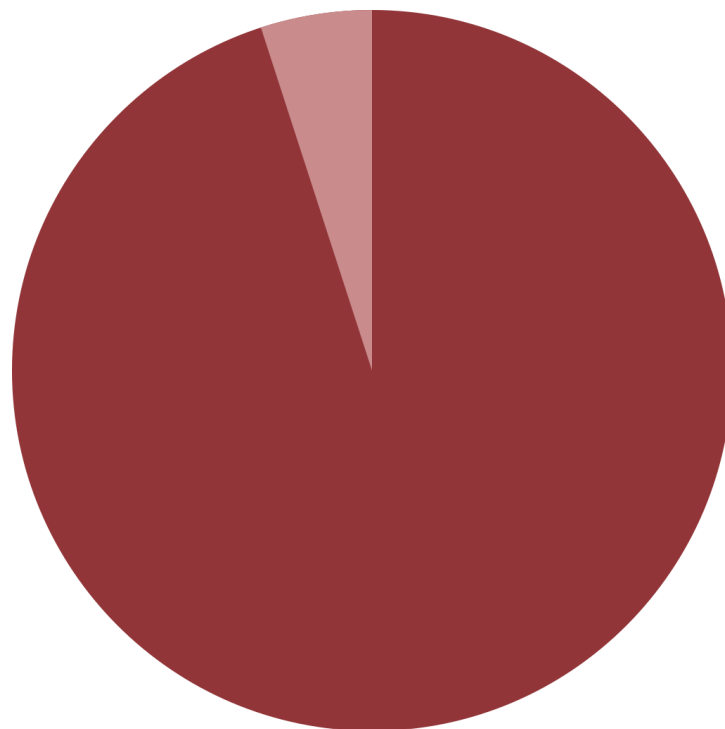


Mateos, MV et al. (2013) NEJM; 369: 438-447



Lonial S et al. (2020) J Clin Oncol; 38(11): 1126-1137.

Aðeins 3-6% þeirra sem greinast með mergæxli höfðu MGUS fyrir greiningu



Eigum við að skima fyrir MGUS?

## Skaðsemi skimana

- Ofgreining og ofmeðhöndlun
  - 15-30% brjóstakrabbameina
- Áhrif á andlega heilsu
  - Hvað með forstig?
- Kostnaður og þjónustuþörf
  - Lungnakrabbameinsskimun myndi fjölga tölvusneiðmyndum á Englandi úr 2 milljónum í 2.5 milljónir á ári
  - Kostnaður einstaklinga



*Jørgensen, K. J et al. (2017) Annals of internal medicine 166; 313-323*

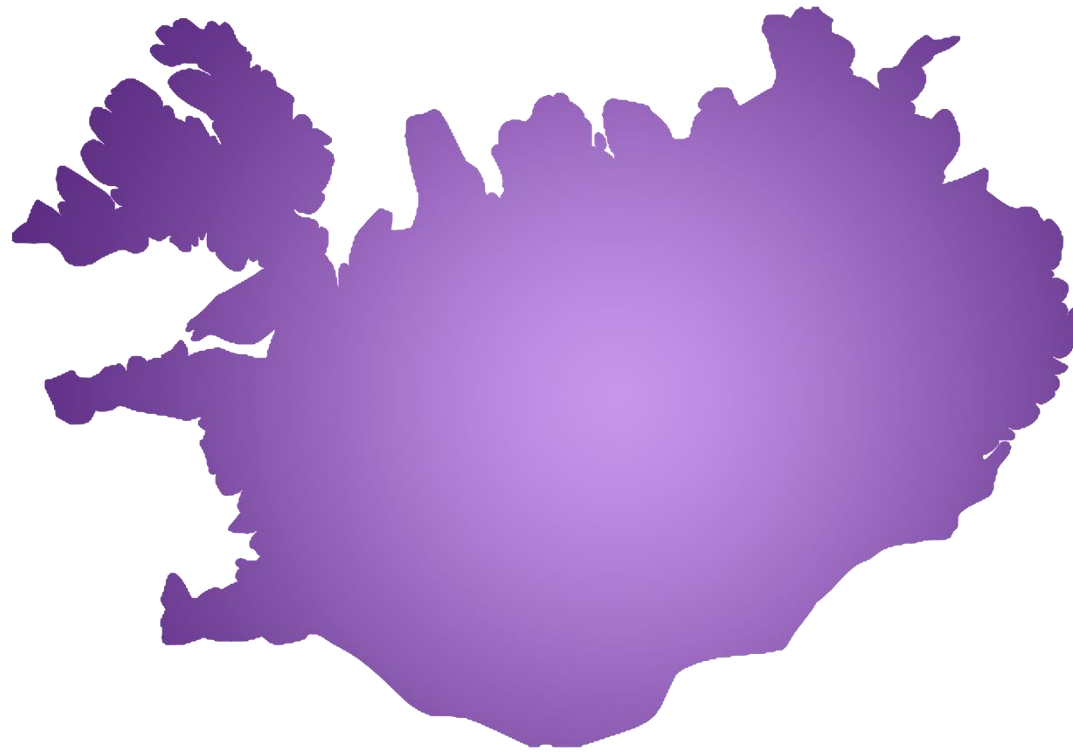
*Kalager, M. et al. (2012) Annals of internal medicine 156; 491-499*

*Snowsill T et al. (2018) Health Technol Assess; 22: 1-276*

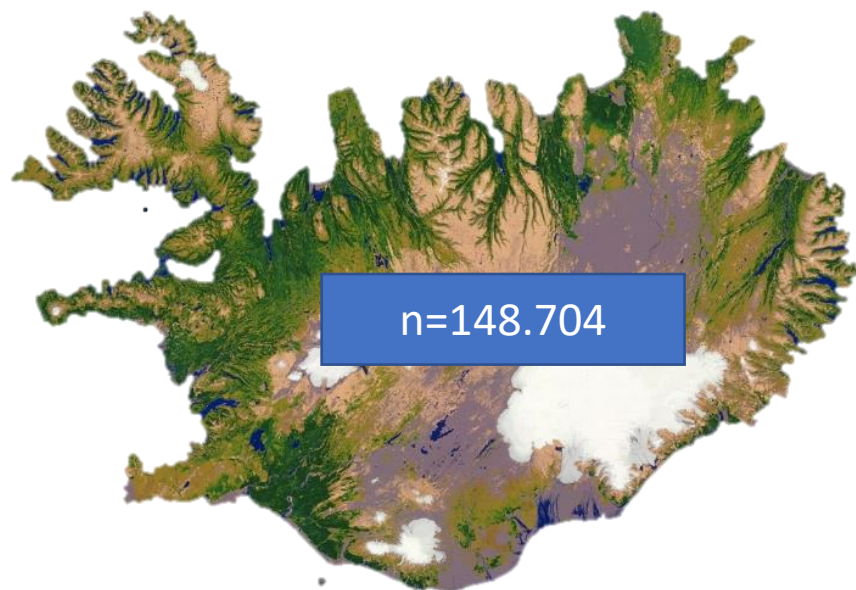
# iStopMM

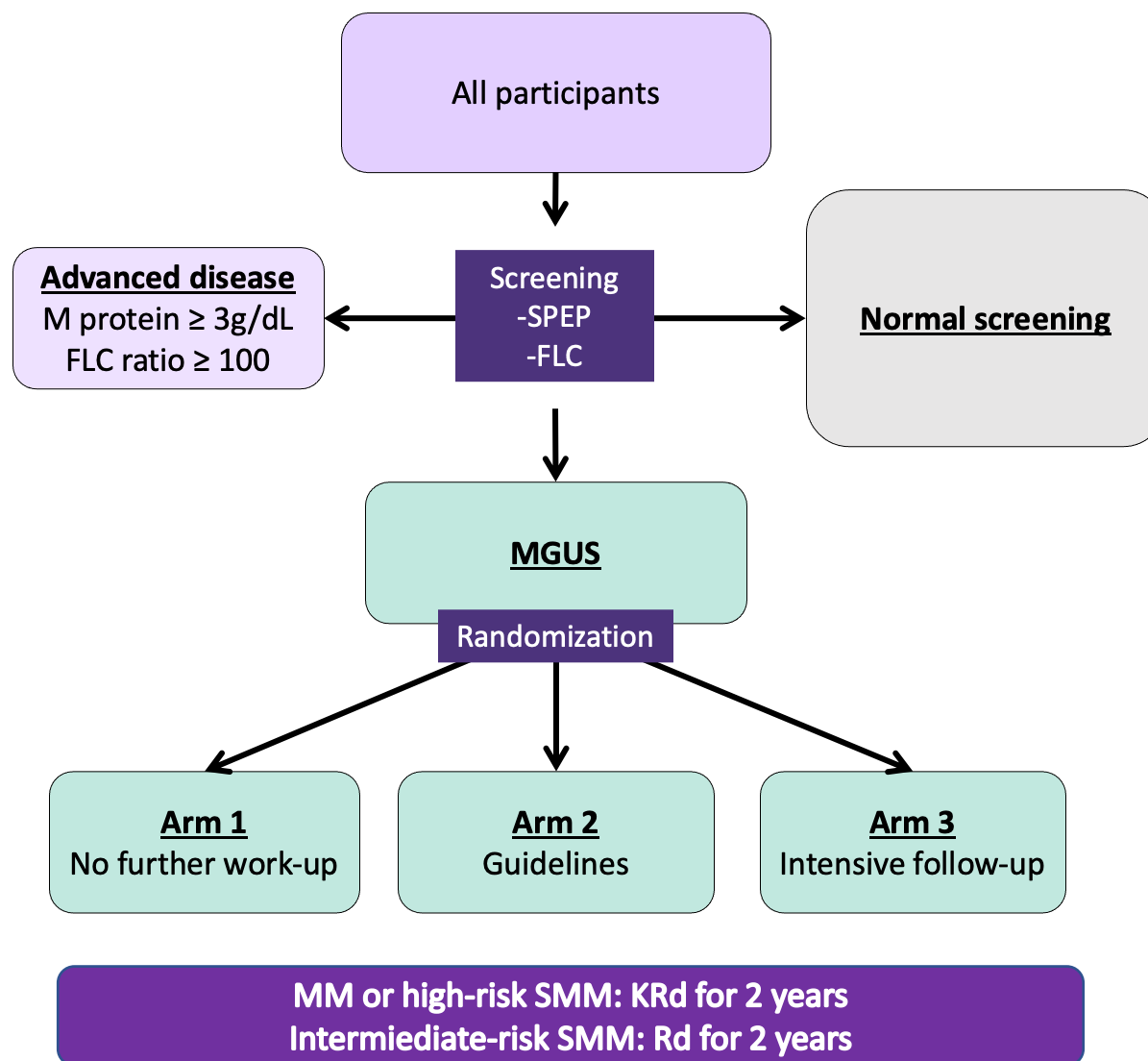
Iceland Screens, Treats or Prevents Multiple Myeloma

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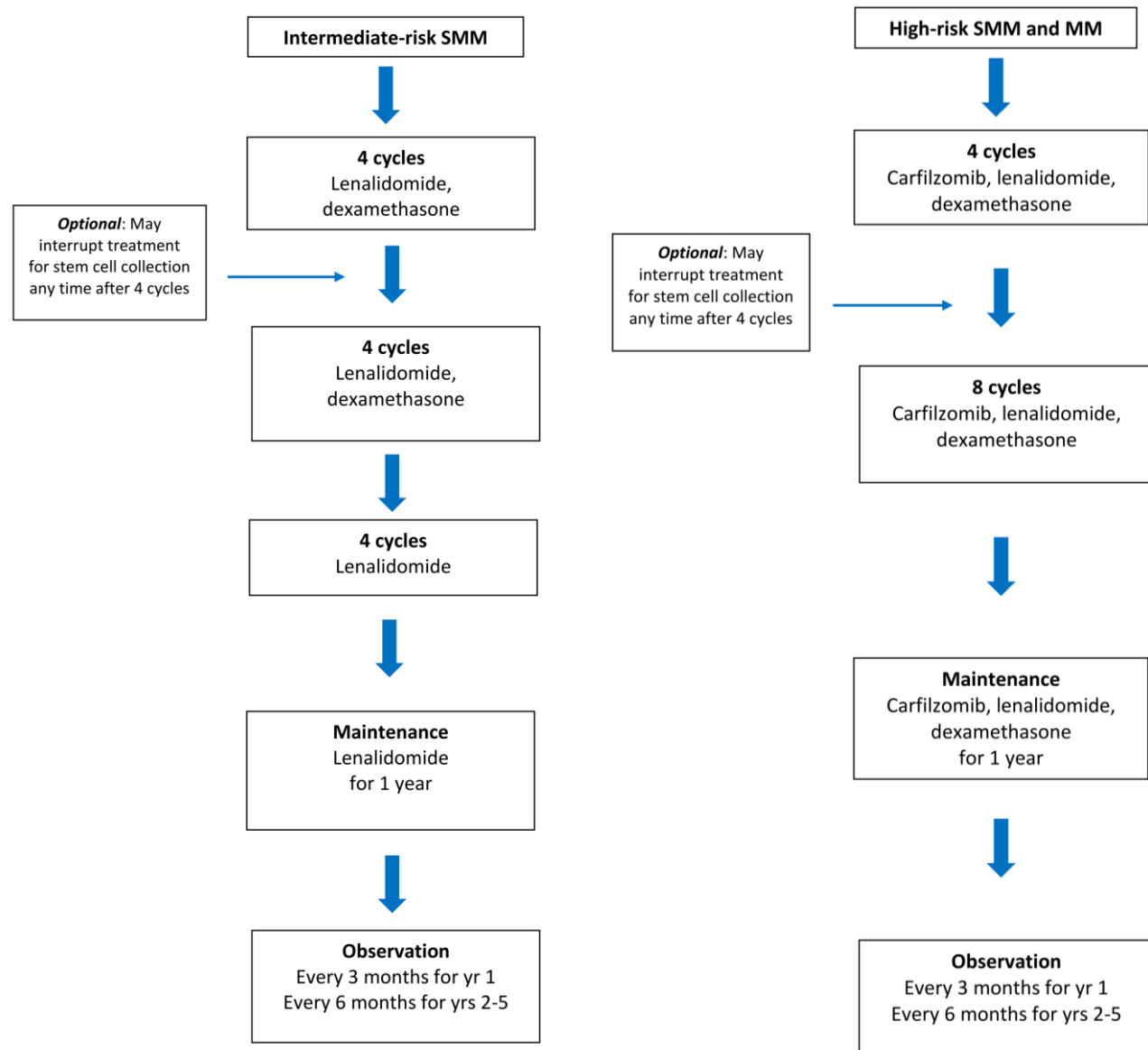
**iStopMM**  
Iceland Screens,  
Treats or Prevents  
Multiple Myeloma





- Spurningalistar
- Lífsgæði
- Miðlægir gagnagrunnar
- Lífsýnasafn

# Lyfjarannsókn



- Byrjuðum 2019
- 67 þátttakendur (Stefnum á 80)
  - **KRd** - Carfilzomib (Kyprolis), lenalidomide (Revlimid) og dexamethasone
  - **Rd** - Lenalidomide (Revlimid) og dexamethasone
- Endurtekn beinmerggssýni
- Lífssýnsafn
- Lífsgæði

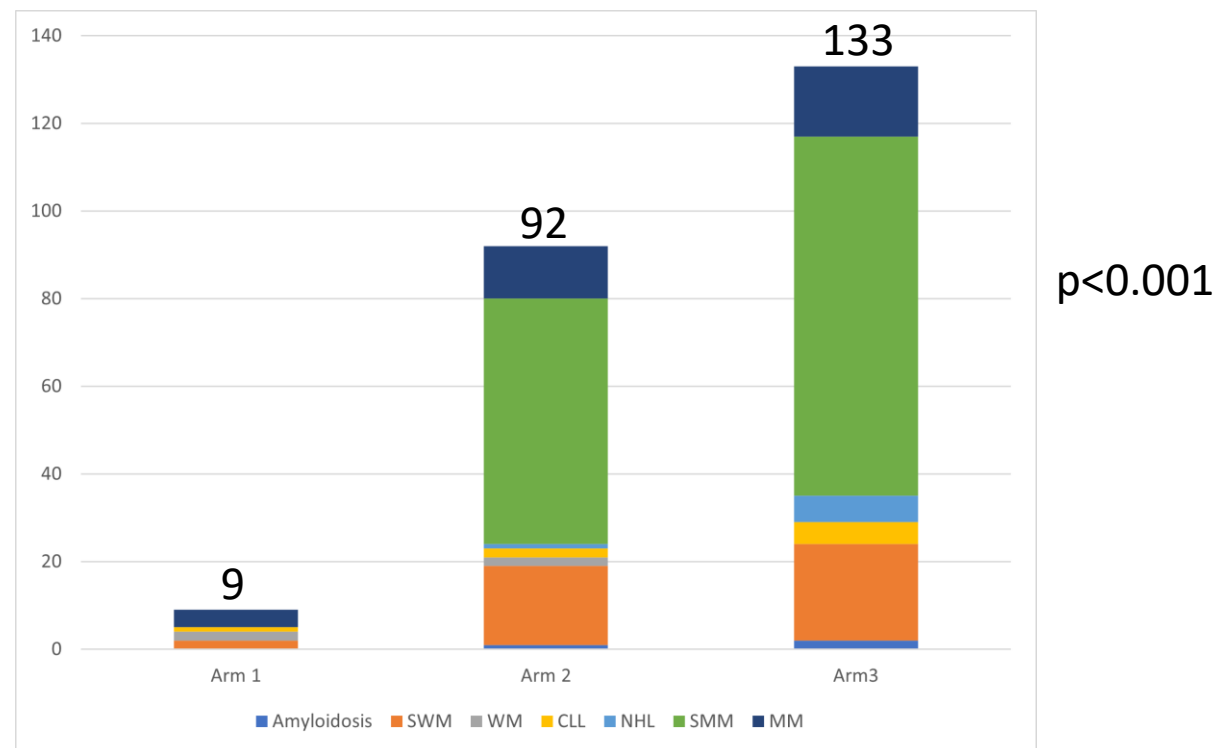
## Tíðni MGUS á Íslandi

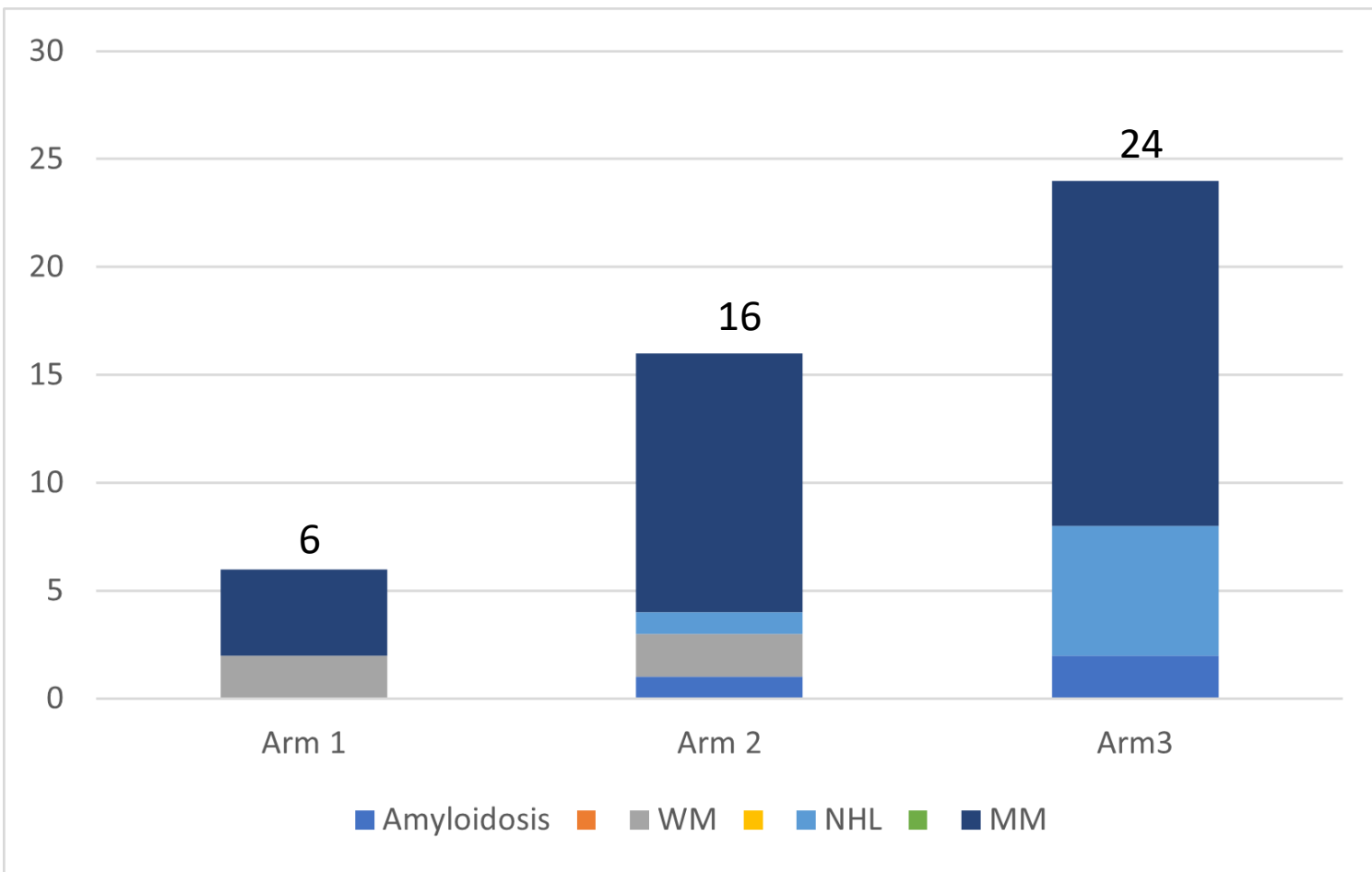
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- Tíðni MGUS á Íslandi yfir 40 ára aldri:
  - **4.3%**
    - 3.6% kvenna
    - 5.0% karla
  - Hækkandi með aldri
    - 1.4% hjá 40-49 ára
    - 2.6% hjá 50-59 ára
    - 4.8% hjá 60-69 ára
    - 7.9% hjá 70-79 ára
    - 10.9% hjá 80-89 ára
    - 14.0% hjá 90-109 ára

# Fyrstu niðurstöður

| Characteristics            | Arm 1     | Arm 2     | Arm 3     |
|----------------------------|-----------|-----------|-----------|
| Number of participants     | 1164      | 1159      | 1164      |
| Female sex                 | 527 (45%) | 534 (46%) | 531 (46%) |
| Median Age years           | 69        | 69        | 69        |
| Isotype                    |           |           |           |
| IgG                        | 586 (50%) | 580 (50%) | 586 (50%) |
| IgA                        | 130 (11%) | 104 (9%)  | 137 (11%) |
| IgM                        | 214 (18%) | 226 (20%) | 208 (18%) |
| Biclonal                   | 91 (8%)   | 106 (9%)  | 91 (8%)   |
| Mean M-protein conc (g/dL) | 0.34      | 0.32      | 0.34      |
| LC-MGUS                    | 143       | 143       | 142       |

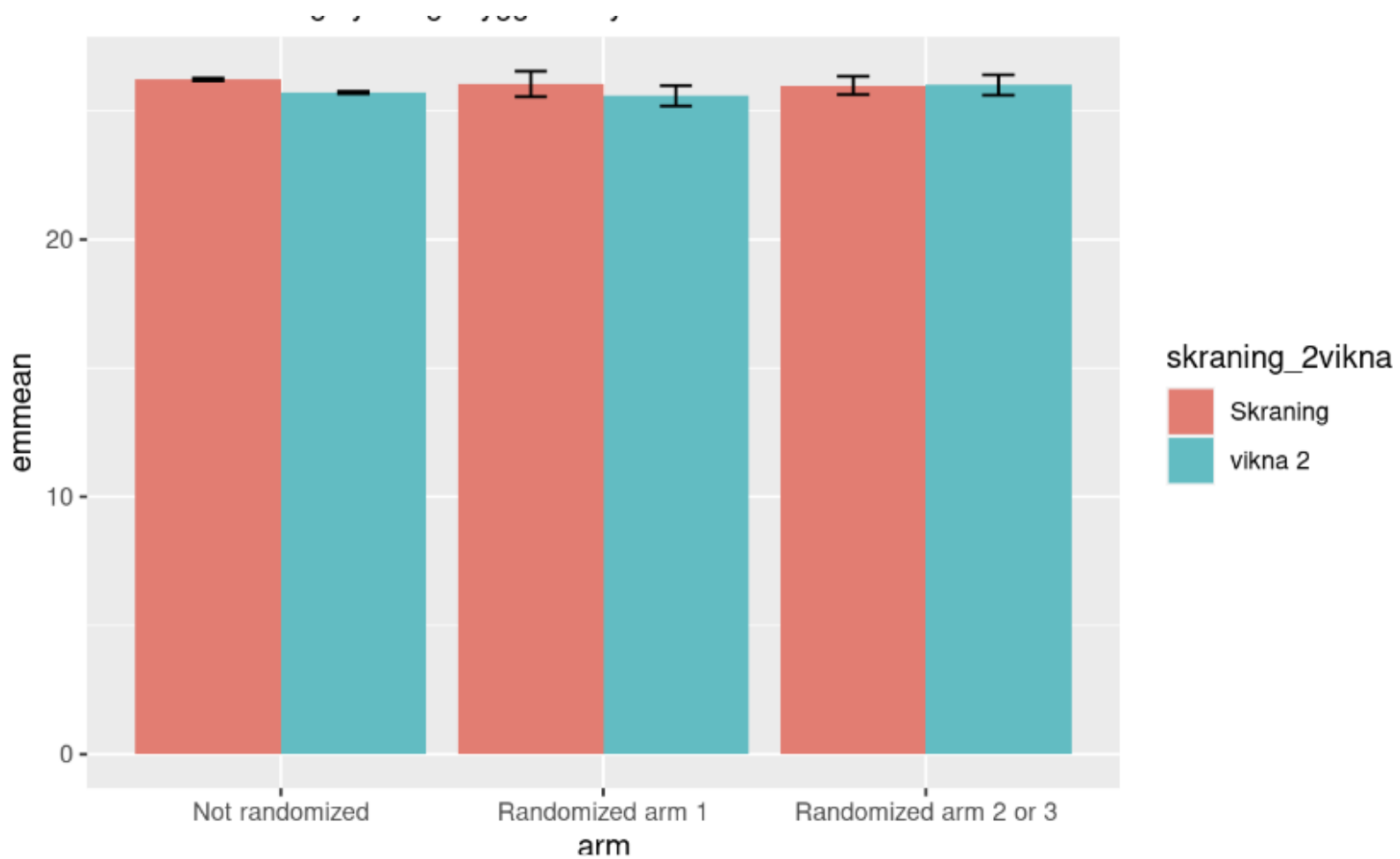




$p=0.0046$

- Skimun er möguleg
- Skimun leiðir til greiningar á klínískt markverðum sjúkdómi
- Skimun leiðir af sér snemmbúna meðferð

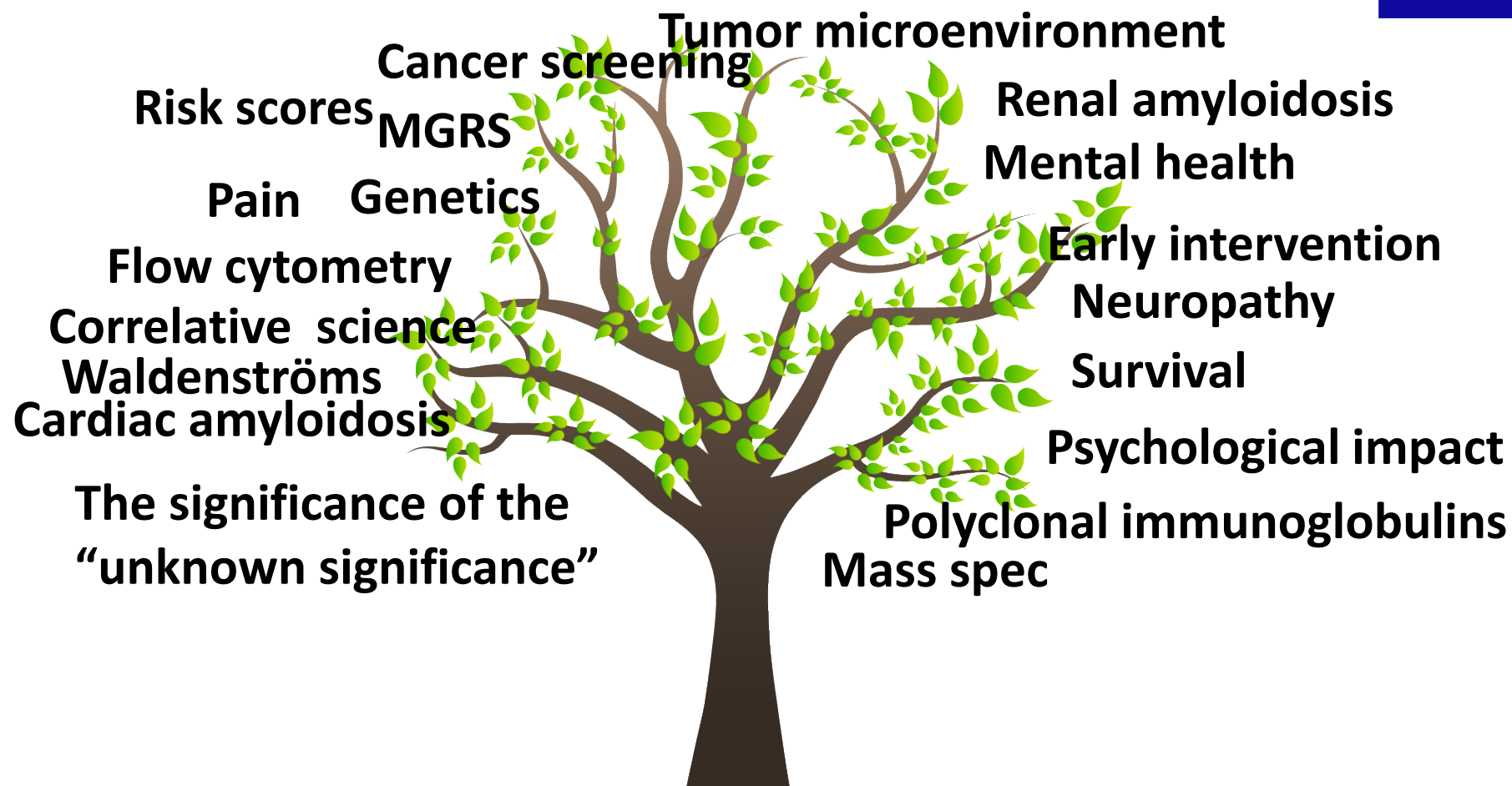
## En hvað með skaðsemi?



Eigum við þá að byrja að skima?

- Mjög stór aðgerð að fara að skima
  - Hverja á að skima?
  - Hvað með kostnaðinn?
- Erfitt að meta ofmeðhöndlun á þessu stigi?
  - Stuttu svarið = Ekki ennþá

# Fleiri rannsóknarspurningar



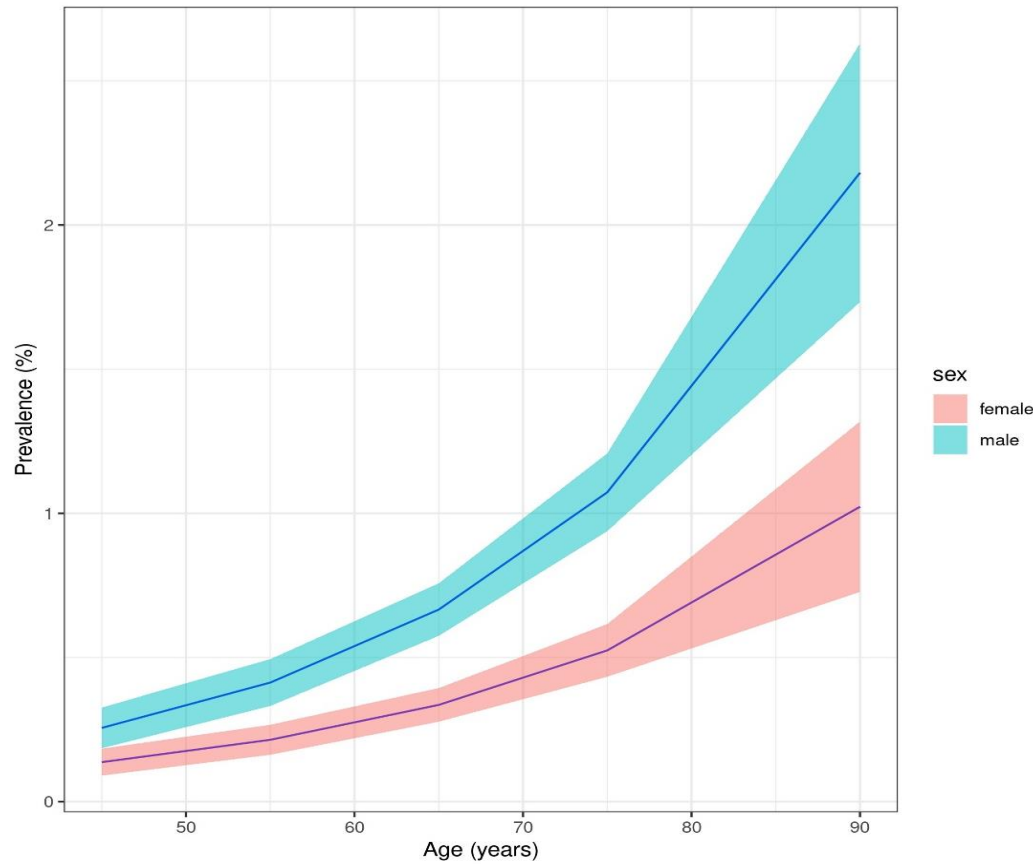
# Prevalence of Smoldering Multiple Myeloma: Results from the iStopMM study

**Sigrún Thorsteinsdóttir**<sup>1,2</sup>, Gauti K Gíslason<sup>1</sup>, Thor Aspelund<sup>3</sup>, Sæmundur Rögnvaldsson<sup>1</sup>, Jón Þórir Óskarsson<sup>1</sup>, Íris Pétursdóttir<sup>1</sup>, Jón K Sigurðsson<sup>1</sup>, Guðrún Á Sigurðardóttir<sup>1</sup>, Ásdís R Þórðardóttir<sup>1</sup>, Brynjar Viðarsson<sup>4</sup>, Páll T Ölundarson<sup>4</sup>, Bjarni A Agnarsson<sup>4</sup>, Margrét Sigurðardóttir<sup>4</sup>, Ingunn Þorsteinsdóttir<sup>4</sup>, Ísleifur Ólafsson<sup>4</sup>, Elías Eypórsson<sup>4</sup>, Ásbjörn Jónsson<sup>4</sup>, Petros Kampanis<sup>5</sup>, Malin Hulcrantz<sup>6</sup>, Brian GM Durie<sup>7</sup>, Thorvardur J Löve<sup>1</sup>, Stephen Harding<sup>5</sup>, Ola Landgren<sup>8</sup>, Sigurður Y Kristinsson<sup>1,4</sup>

1. Faculty of Medicine, University of Iceland, Reykjavík, Iceland
2. Department of Hematology, Rigshospitalet, Copenhagen, Denmark
3. Public Health Sciences, University of Iceland, Reykjavík, Iceland
4. Landspítali University Hospital, Reykjavík Iceland
5. The Binding Site, Birmingham, West Midlands, UK.
6. Memorial Sloan Kettering Cancer Center, New York, NY, USA.
7. Cedar-Sinai Samuel Oschin Cancer Center, Los Angeles, CA, USA
8. Sylvester Comprehensive Cancer Center, University of Miami, Miami, FL, USA

# Mallandi mergæxli er algengara en við höldum

Population prevalence of smoldering multiple myeloma according to age



Tíðni >40 ára er 0.5%

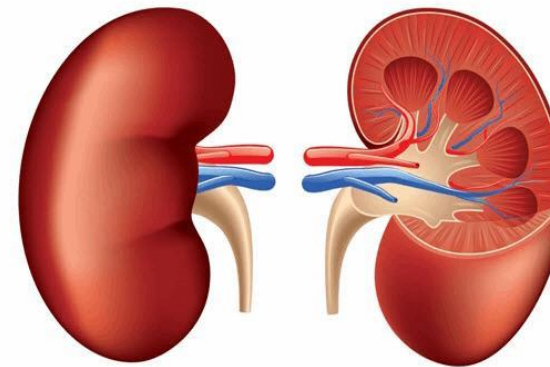
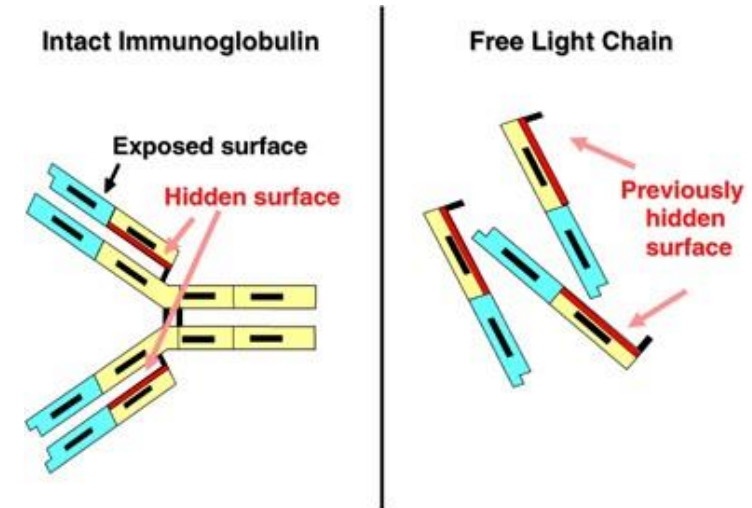
ARTICLE **OPEN**

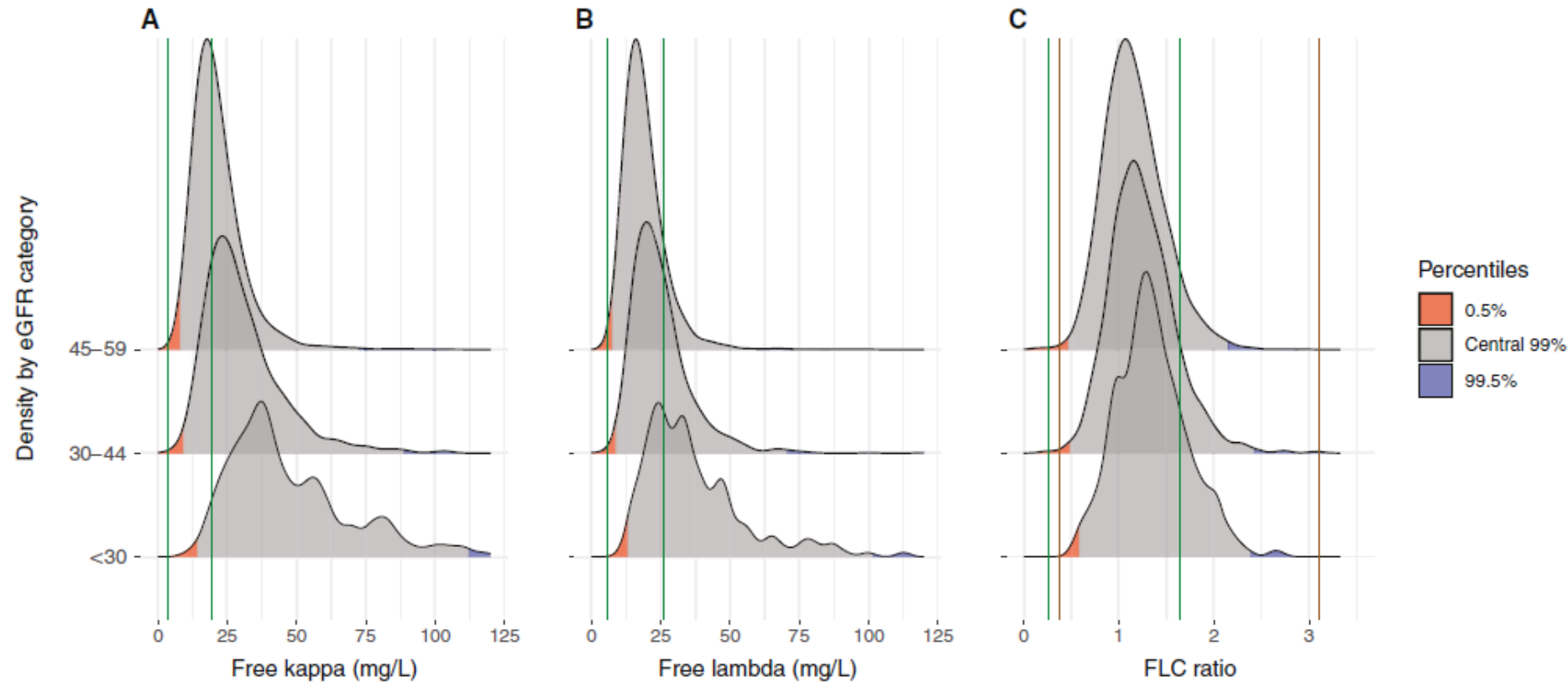
# Defining new reference intervals for serum free light chains in individuals with chronic kidney disease: Results of the iStopMM study

Thorir Einarsson Long <sup>1,2,3</sup>, Olafur Skuli Indridason<sup>3</sup>, Runolfur Palsson <sup>1,3</sup>, Sæmundur Rognvaldsson <sup>1,3</sup>, Thorvardur Jon Love<sup>1,3</sup>, Sigrun Thorsteinsdottir <sup>1,4</sup>, Ingigerdur Solveig Sverrisdottir<sup>1,5</sup>, Brynjar Vidarsson<sup>3</sup>, Pall Torfi Onundarson<sup>1,3</sup>, Bjarni Agnar Agnarsson<sup>1,3</sup>, Margret Sigurdardottir<sup>3</sup>, Ingunn Thorsteinsdottir<sup>3</sup>, Isleifur Olafsson<sup>3</sup>, Asdis Rosa Thordardottir<sup>1</sup>, Elias Eythorsson<sup>3</sup>, Asbjorn Jonsson<sup>1,3</sup>, Gauti Gislason <sup>1</sup>, Andri Olafsson<sup>1</sup>, Hlif Steingrimsdottir<sup>3</sup>, Malin Hultcrantz <sup>6</sup>, Brian G. M. Durie<sup>7</sup>, Stephen Harding<sup>8</sup>, Ola Landgren <sup>9,10</sup> and Sigurdur Yngvi Kristinsson <sup>1,3,10</sup>✉

# Bakgrunnur

- Við mælum léttu keðjur kappa og lambda og reiknum hlutfallið (FLC hlutfall)
- Skert nýrnastarfsemi hefur áhrif á mælinguna
- Léleg viðmið til fyrir skerta nýrnastarfsemi
- Hvað er óeðlilegt og hvað er eðlilegt í þessum einstaklingum er mjög á reiki





**Fig. 3 Comparison of the distribution of kappa and lambda free light chains (FLC) and FLC ratios to current reference intervals by estimated glomerular filtration rate (eGFR) subgroups.** The portion of the distribution below the 0.5th percentile is shaded red and the portion above the 99.5th percentile is shaded blue. **A** Serum kappa FLC (green lines 3.3–19.4 mg/L). **B** Serum lambda FLC (green lines 5.7–26.3 mg/L). **C** FLC ratio (green lines – conventional reference interval: 0.26–1.65; brown lines – current kidney reference interval: 0.37–3.10). Kappa and lambda FLC are truncated at 120 mg/L and FLC ratio at 3.5 in the figures for better visualization. eGFR Estimated glomerular filtration rate, FLC Free light chains.

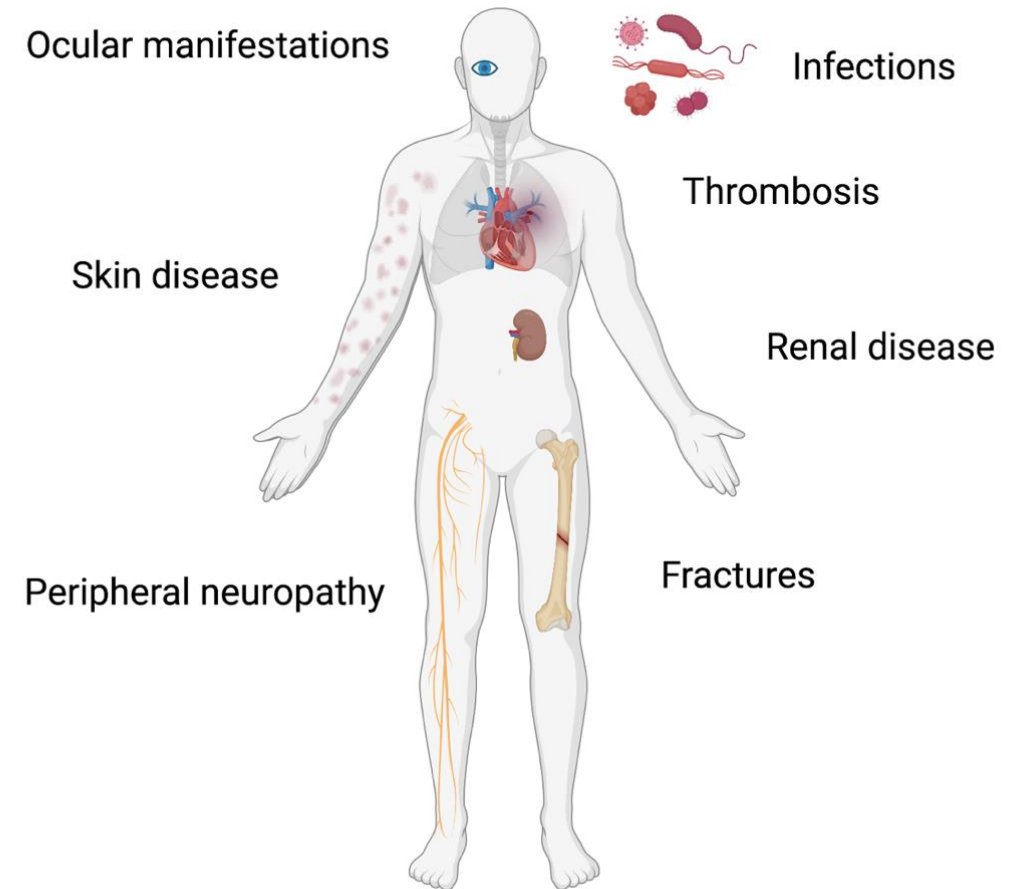
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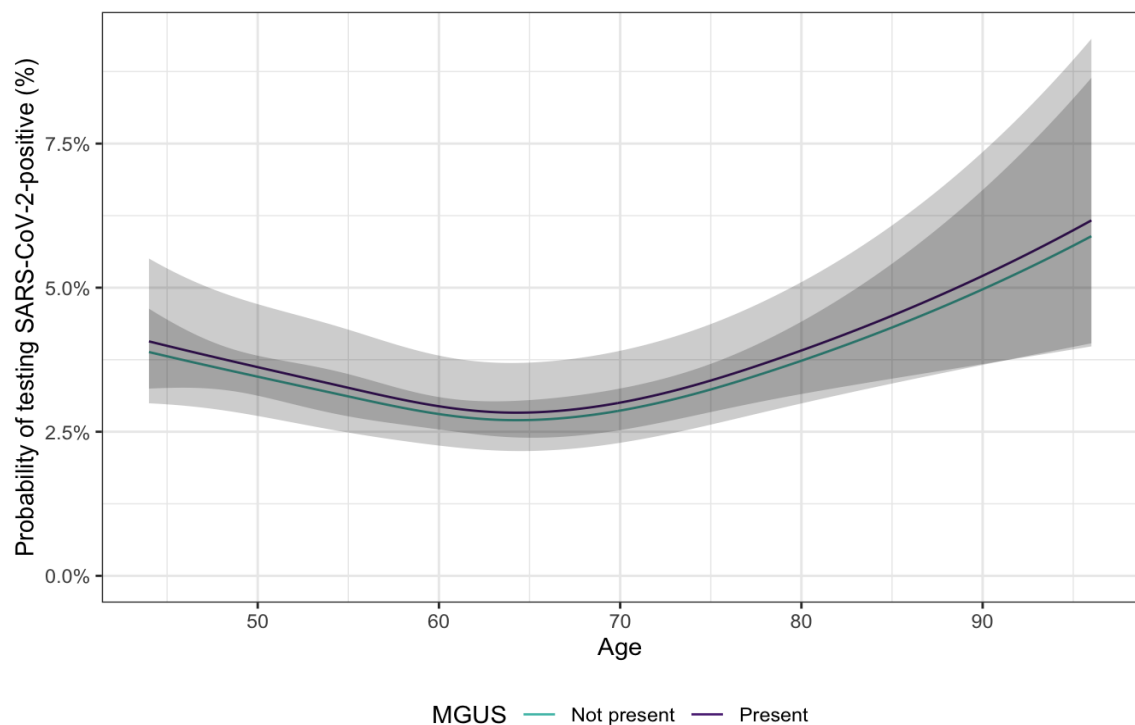
# Monoclonal gammopathy of undetermined significance and COVID-19: a population-based cohort study

Saemundur Rognvaldsson <sup>1,2,9</sup>, Elias Eythorsson<sup>2,9</sup>, Sigrun Thorsteinsdottir <sup>1,3</sup>, Brynjar Vidarsson<sup>2</sup>, Pall Torfi Onundarson<sup>1,2</sup>, Bjarni A. Agnarsson<sup>1,2</sup>, Margret Sigurdardottir<sup>2</sup>, Ingunn Thorsteinsdóttir<sup>2</sup>, Isleifur Olafsson<sup>1,2</sup>, Hrafnhildur L. Runolfsson <sup>2</sup>, Dadi Helgason<sup>2</sup>, Arna R. Emilsdottir <sup>2</sup>, Arnar S. Agustsson<sup>1,2</sup>, Aron H. Bjornsson <sup>1,2</sup>, Gudrun Kristjansdottir<sup>2</sup>, Asdis Rosa Thordardottir<sup>1</sup>, Olafur Skuli Indridason<sup>1,2</sup>, Asbjorn Jonsson <sup>4</sup>, Gauti Kjartan Gislason <sup>1</sup>, Andri Olafsson<sup>1</sup>, Hlif Steingrimsdottir<sup>2</sup>, Petros Kampanis<sup>5</sup>, Malin Hultcrantz <sup>6</sup>, Brian G. M. Durie<sup>7</sup>, Stephen Harding<sup>5</sup>, Ola Landgren <sup>8</sup>, Runolfur Palsson<sup>1,2</sup>, Thorvarður Jon Love<sup>1,2</sup> and Sigurdur Yngvi Kristinsson <sup>1,2</sup>✉

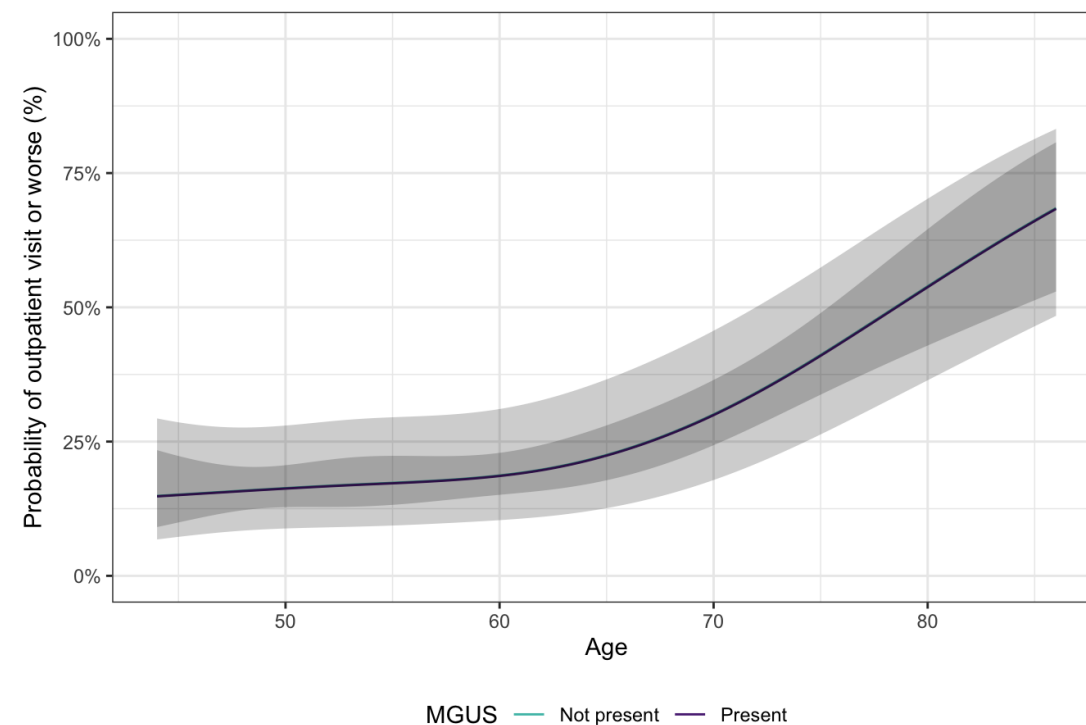
# Bakgrunnur

- MGUS hefur verið tengt við fjölda sjúkdóma
- Oft bara fylgni rannsóknir þar sem er mikil hættu á bjögun
  - Þýði rannsókna inni halda þá sem greinast með MGUS
- MGUS verið tengt við sýkinga, þ.m.t. veirusýkingar
- MGUS tengt við ónæmisbælingu
- Skiptir MGUS máli í COVID-19?





Adjusted to:sex=Female

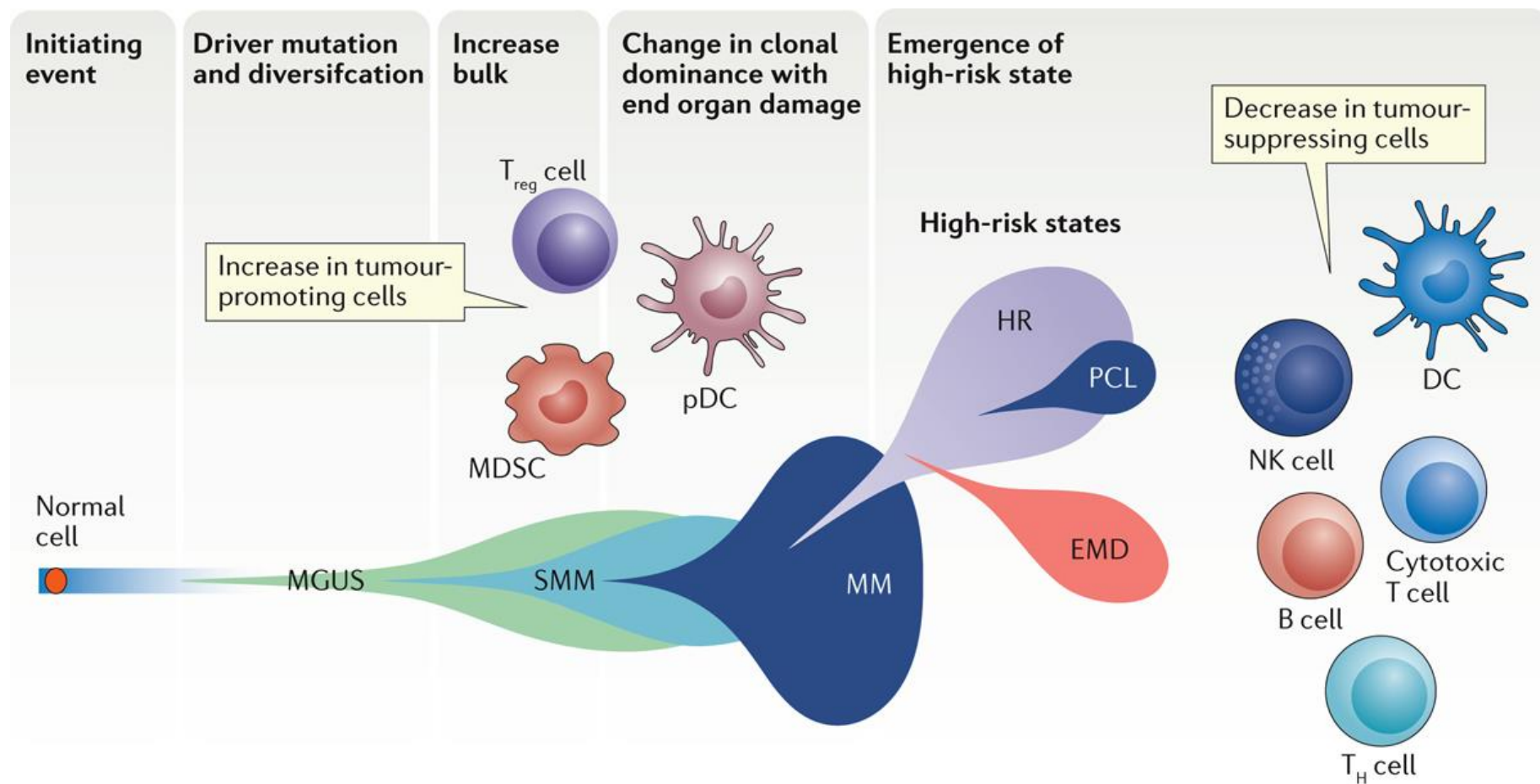


Adjusted to:sex=Female

Óvænt niðurstaða. Getur verið að MGUS valdi ekki eins mörgum sjúkdómum og hefur verið talið?

## Af hverju skiptir þetta allt saman máli?

- Skimun gæti skilað sér gjörbreyttu landslagi á sviði mergæxlis?
- Í leiðinni erum við að finna bestu leiðir til rannsaka og fylgja eftir MGUS og mallandi mergæxli
- Ef við skiljum forstig mergæxlis betur þá skiljum við mergæxli betur...



- t(4;14)\*
- t(6;14)
- t(11;14)
- t(14;16)\*
- t(14;20)\*
- Hyperdiploidy



- Copy number changes (e.g. Gain (1q), Del (1p) and Del (17p))
- Mutations



- MYC translocations
- Jumping translocations
- Homozygous TSG inactivation
- Amp(1q)



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Teymið

