

THE SWEDISH  
MACULA  
REGISTER



# Change in visual acuity and need for low vision rehabilitation after intra-vitreal treatment for wet Age-related Maculadegeneration - a register based study from the Swedish Macula Register



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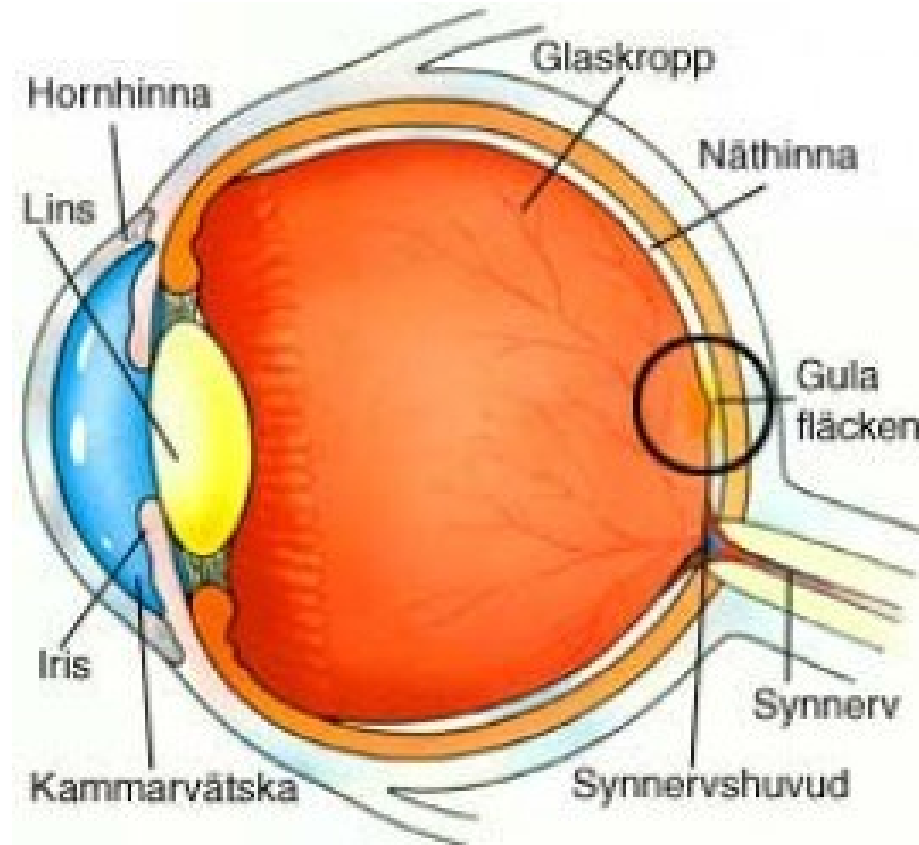
No financial interests



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What is AMD (age related macular degeneration)?

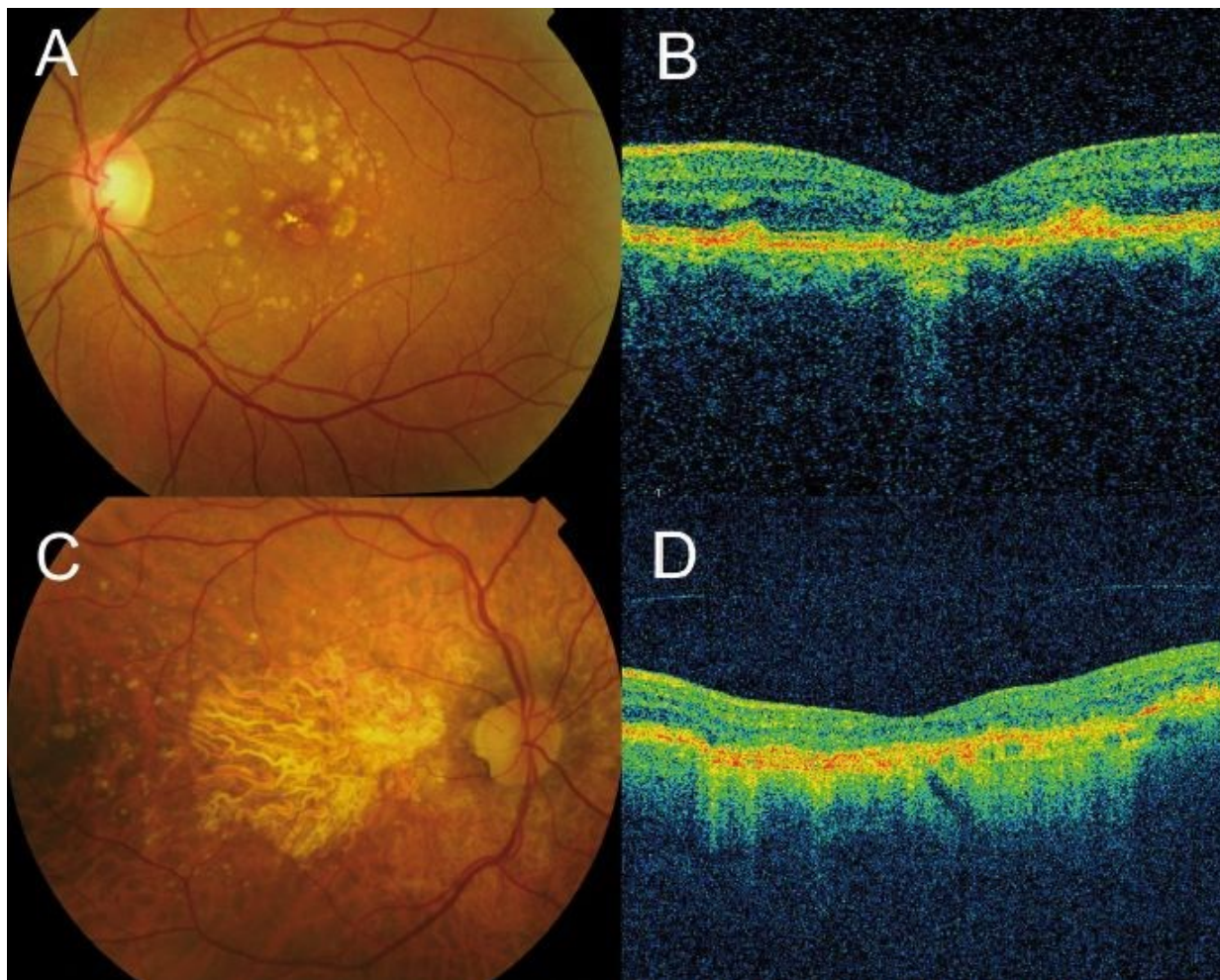


# AMD (age related macular degeneration)

- AMD
  - 10% 65-74 år
  - 30% > 75 år
- "Dry AMD" 85-90%
- "wet AMD" 10-15%



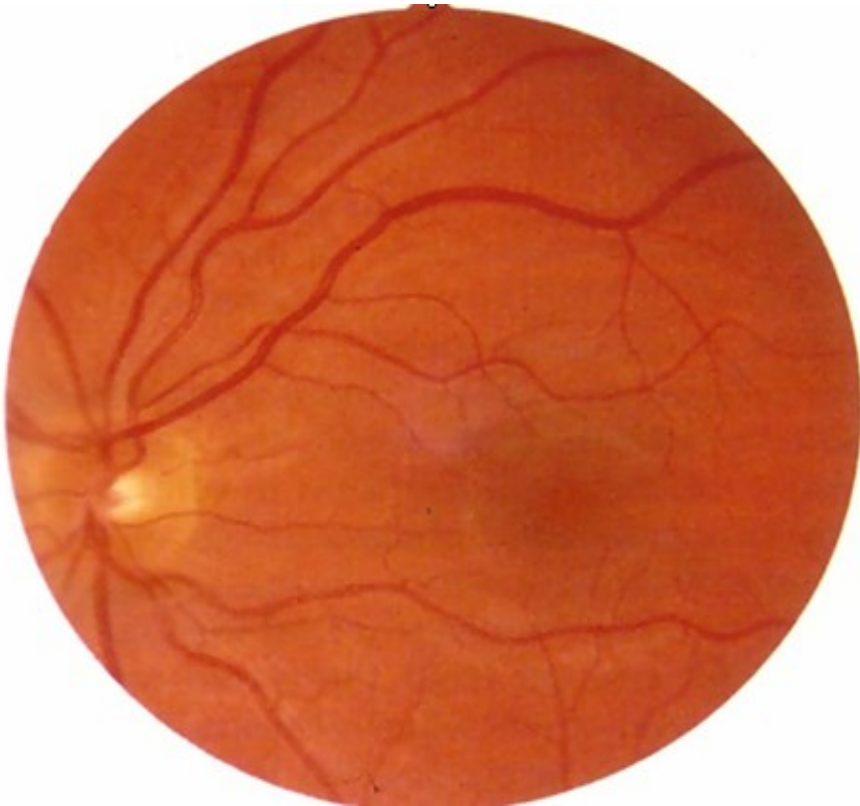
# Dry AMD





# Age related macular degeneration

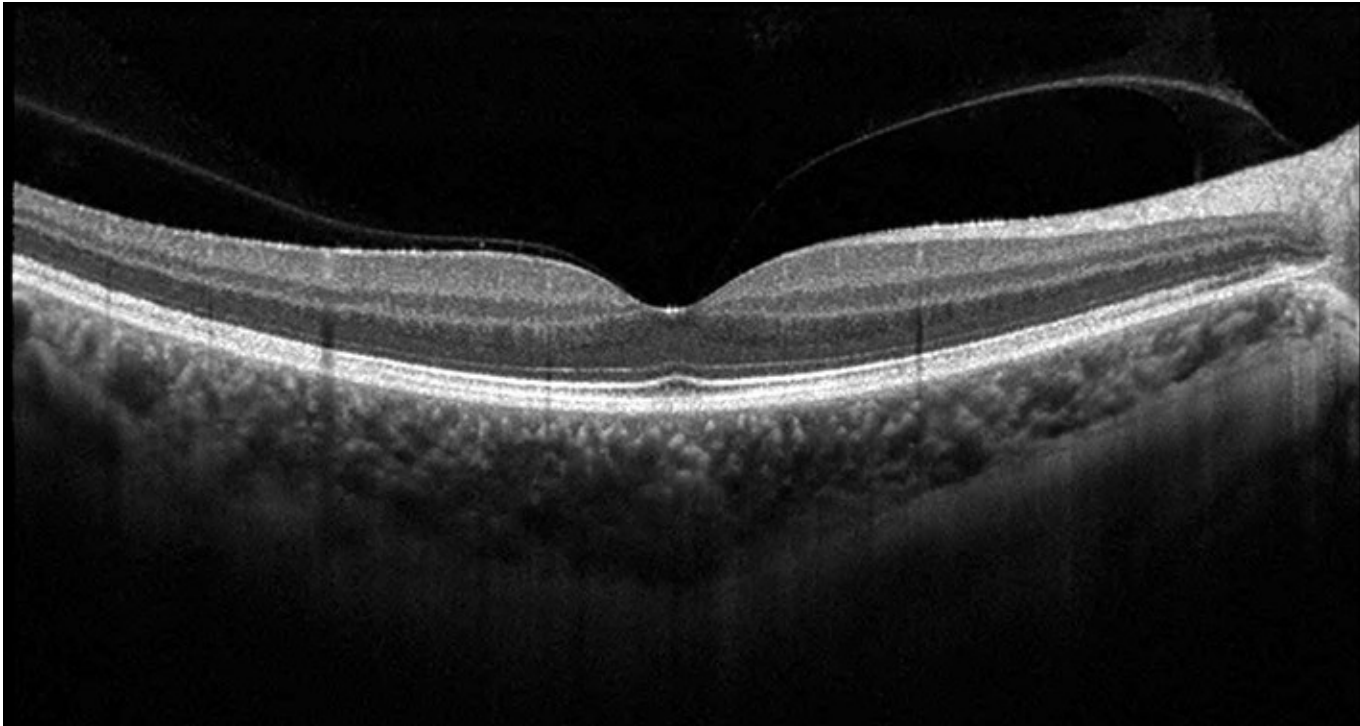
Normal fundus



AMD

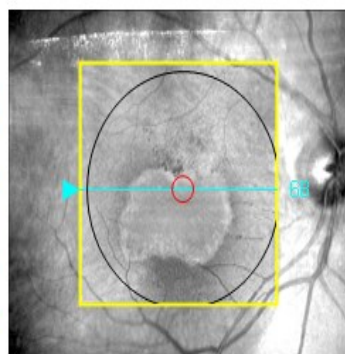
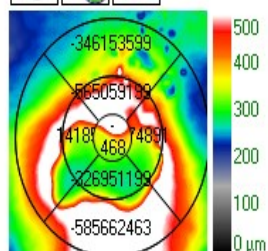


# Normal fundus OCT



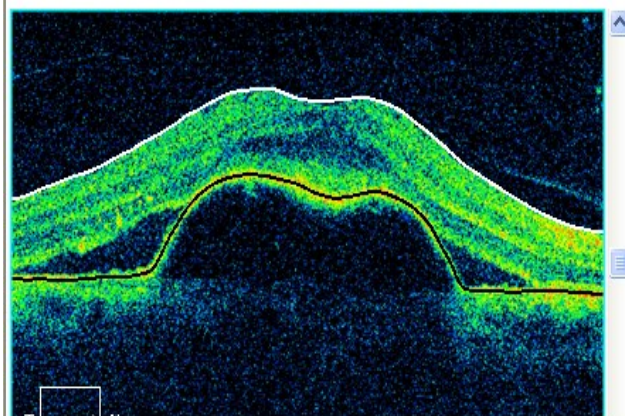
Exam from 2009-06-30 10:16

Signal Strength 8/10



Fovea: 270, 68

Transparency: 0 %

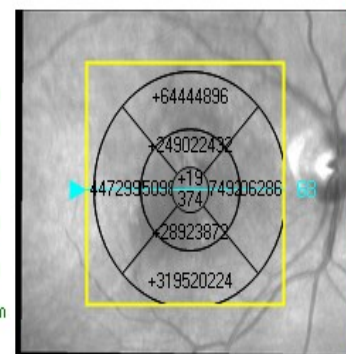
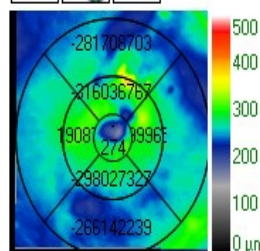


Exam from 2009-10-14 08:53

Signal Strength 7/10

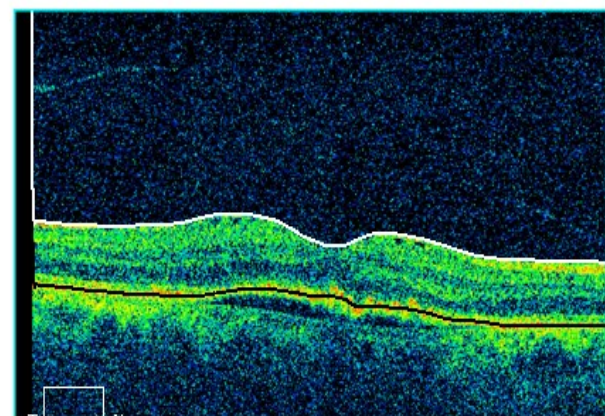


Registration: Manual

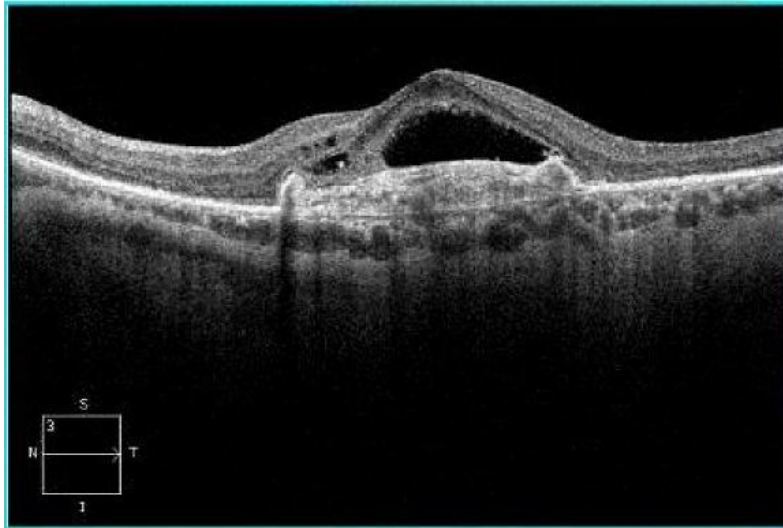


Fovea: 270, 68

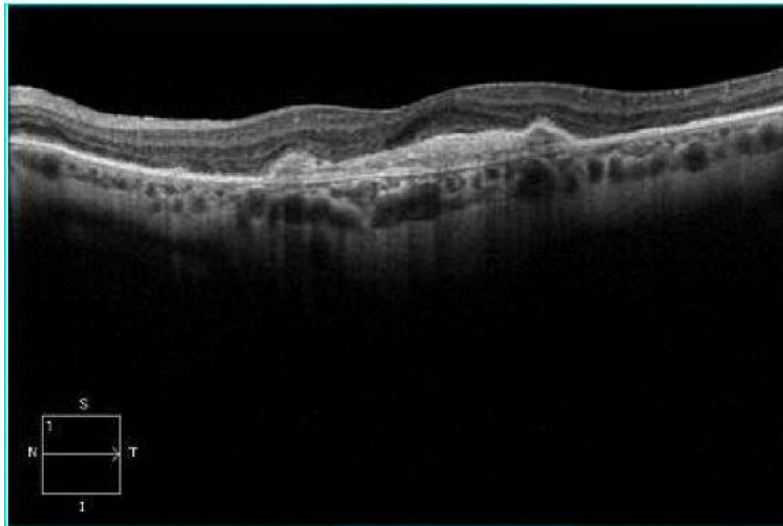
Transparency: 100 %



# Wet AMD



before treatment



after treatment



# Wet AMD

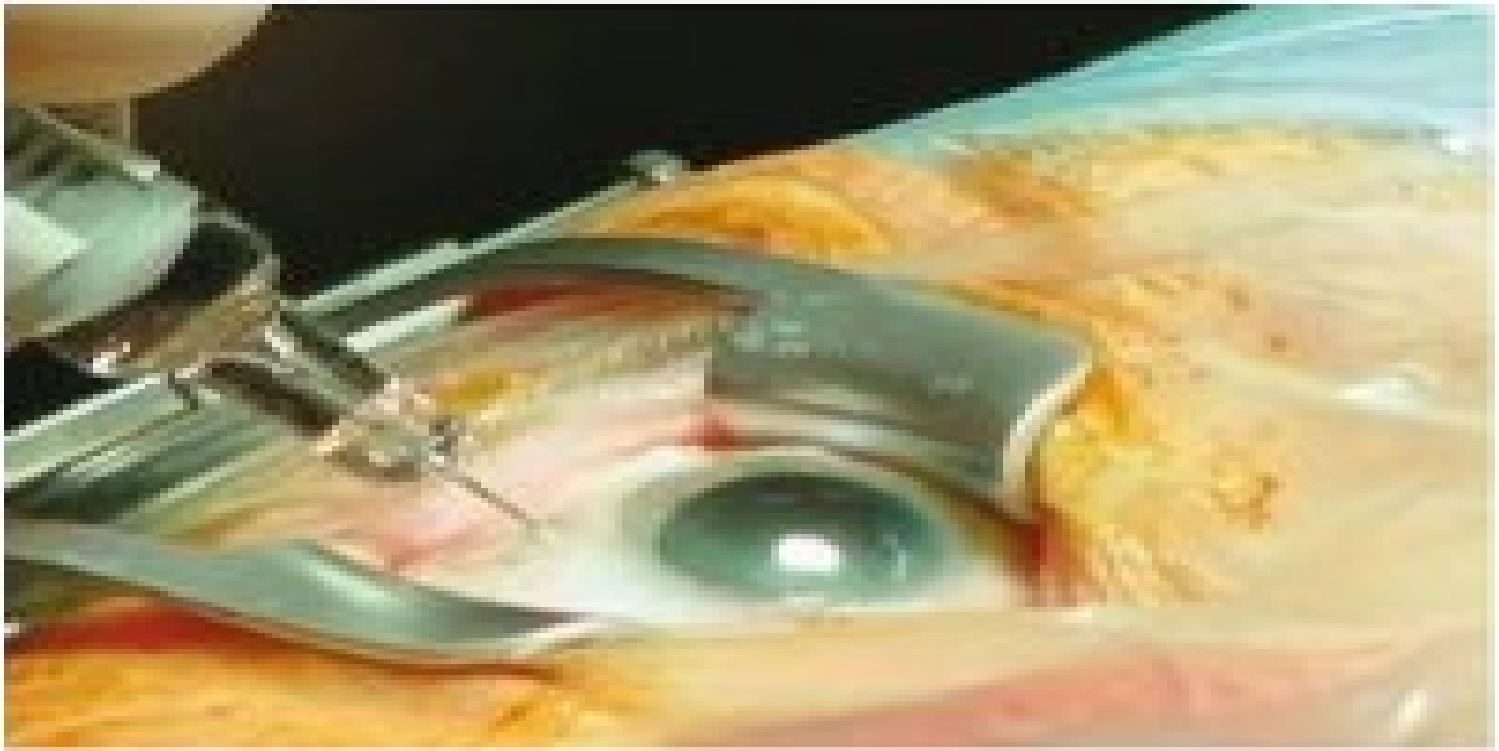


# New treatments for wet Intravitreal injektion

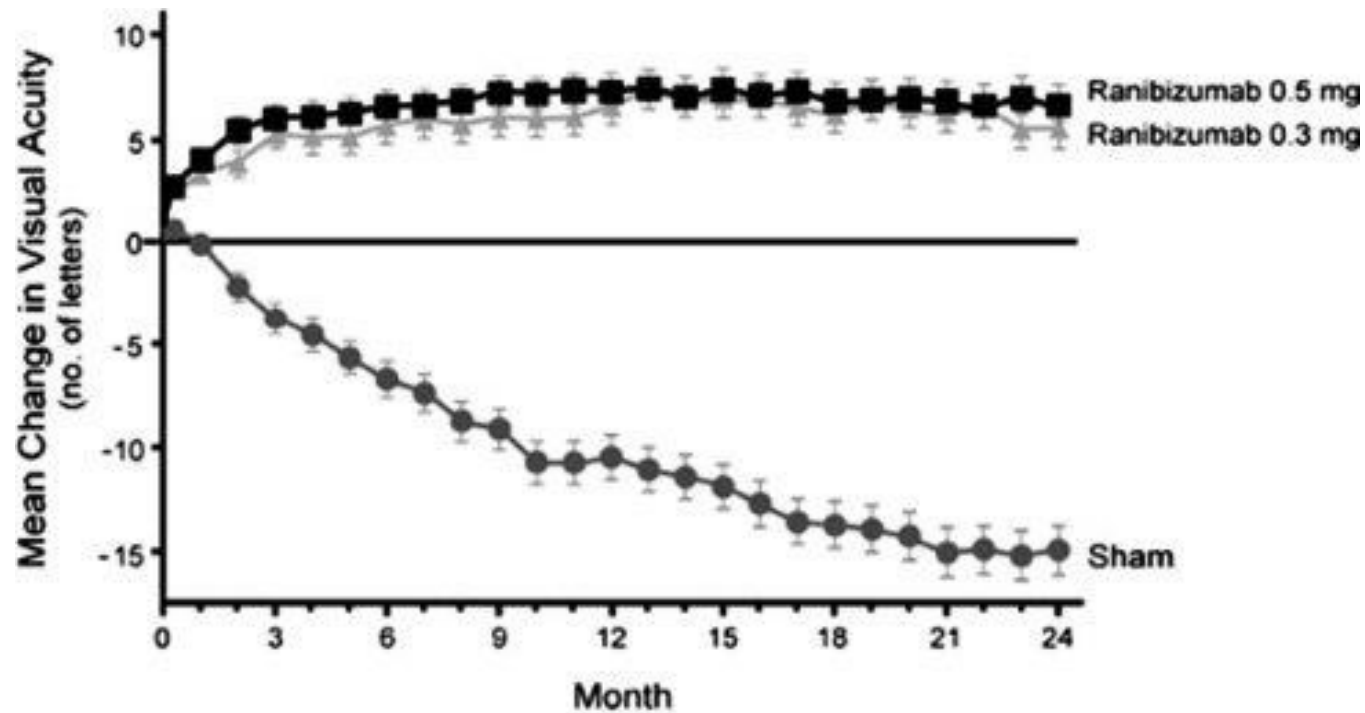


- 2007 a new treatment for wet AMD
- Intravitreal anti-VEGF therapy

# Intravitreal injektion av anti-VEGF



# Natural course for wet AMD mean change in Visual Acuity (VA)

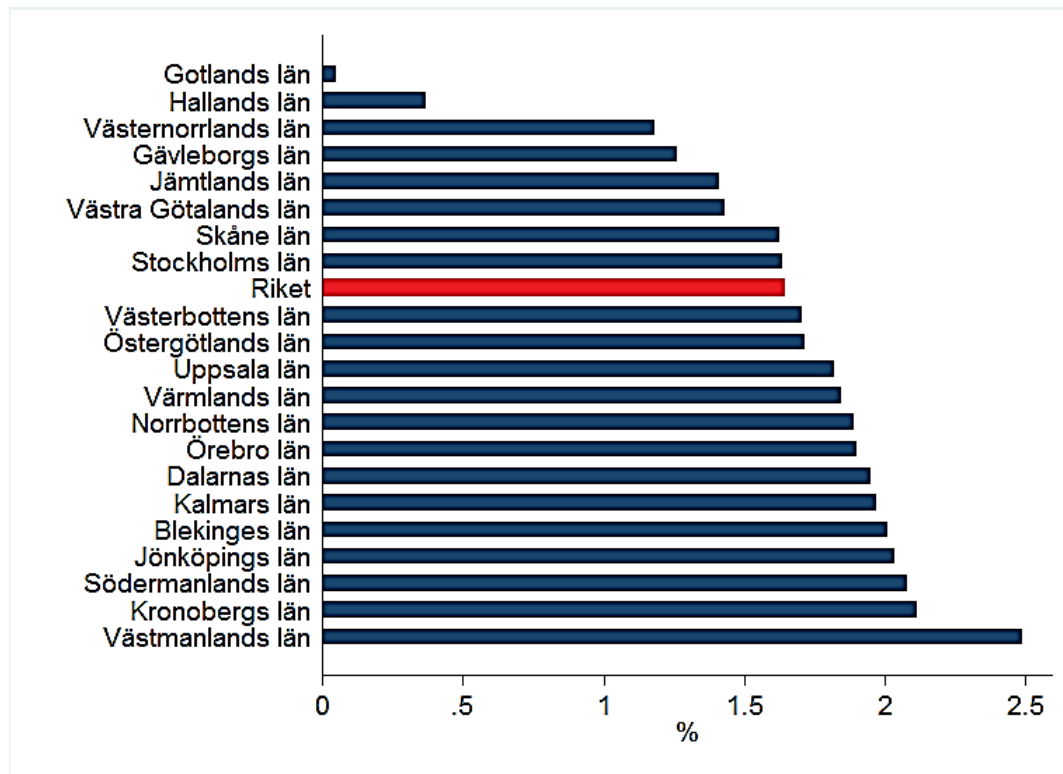




# The Swedish Macula register

- A national register for treatment of wet AMD in.
- 80 % coverage
- National results for AMD treatment concerning age, sex, type of lesion, frequencies of treatments and follow-up visits
- Medical outcome; distance visual acuity, near visual acuity and adverse events.
- Analyze and compare different treatments and their outcome

## Proportion of population(age ≥ 70 år) in SMR per county in Sweden

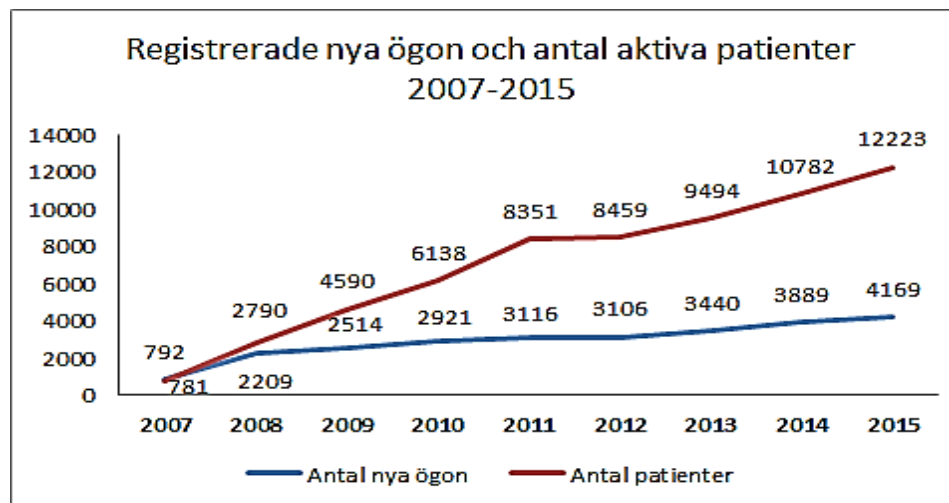


2010	2011	2012	2013	2014	2015
0,5 %	0,8 %	1,0 %	1,2 %	1,4 %	1,6 %

## Swedish Macula register (SMR) 2007-2015

- 22 353 patients
- 26 156 eyes

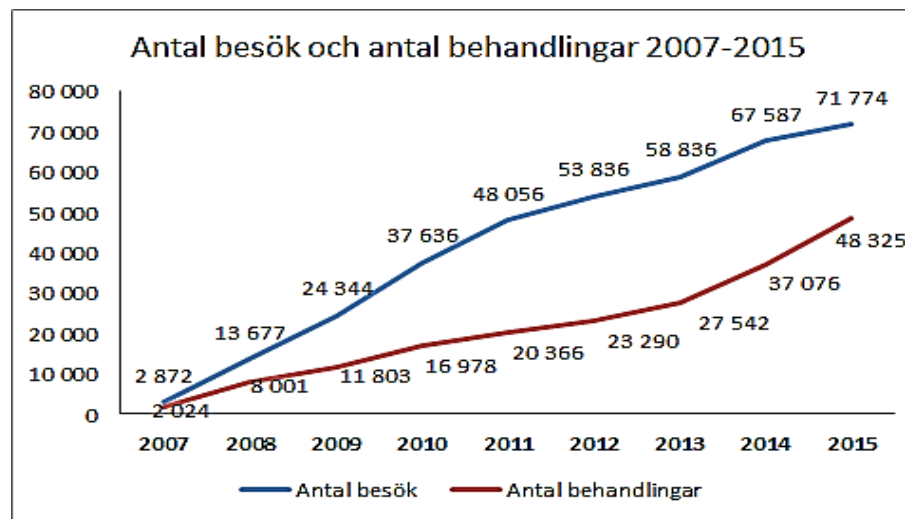
Number of registered patients and new eyes 2007-2015



## Swedish Macula register (SMR) 2007-2015

- 378 176 visits
- 195 405 treatments

Number of visits and treatment 2007- 2015



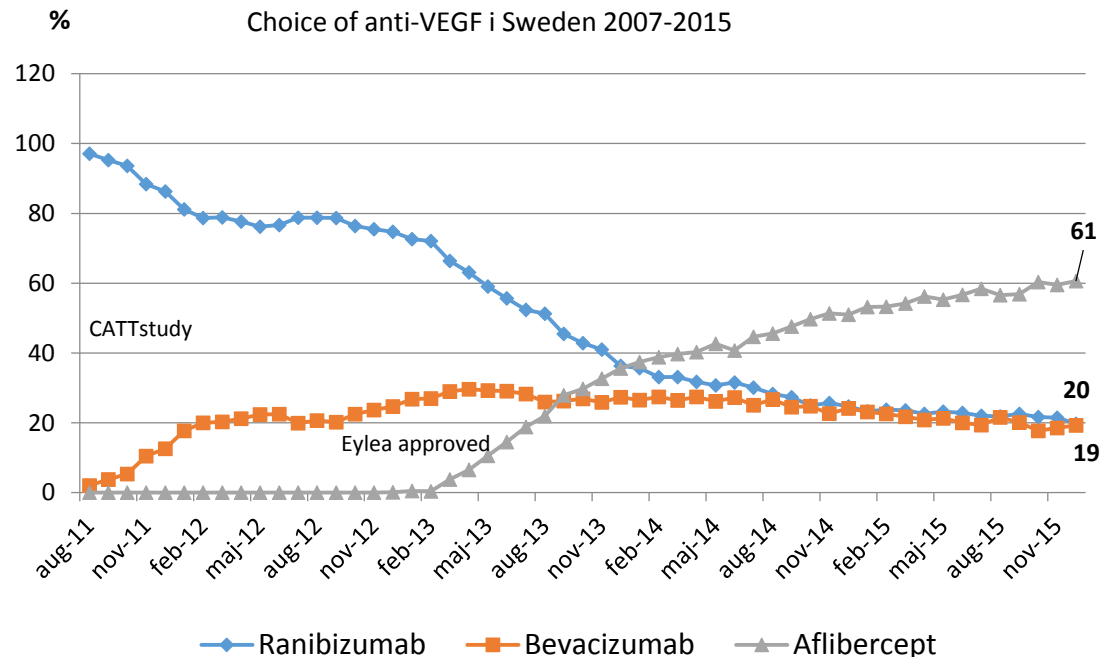


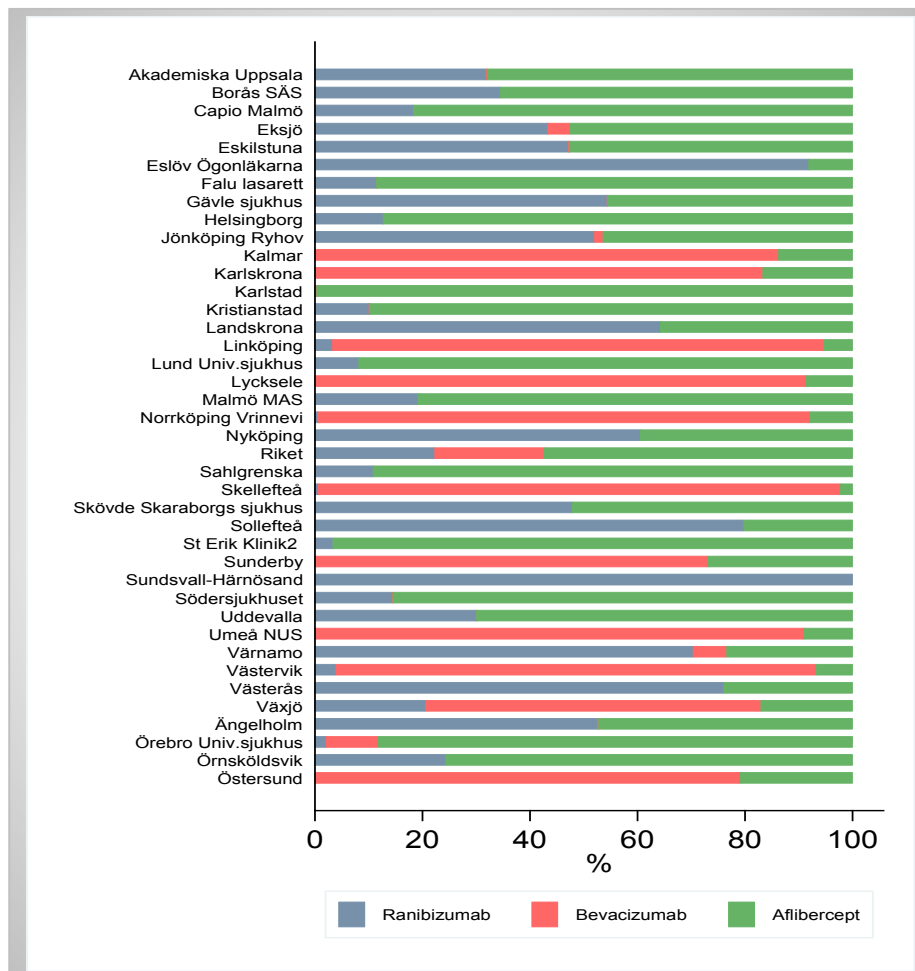
# The Swedish Macula Register(SMR)

- Mean age for start of treatment is 79 years of age
- 64% of patients are female

## August 2016

- 24 873 patients,
- 29 280 eyes
- 428 224 visits
- 232 020 treatments
- 99% of treatments are intra-vitreal injections (IVT)

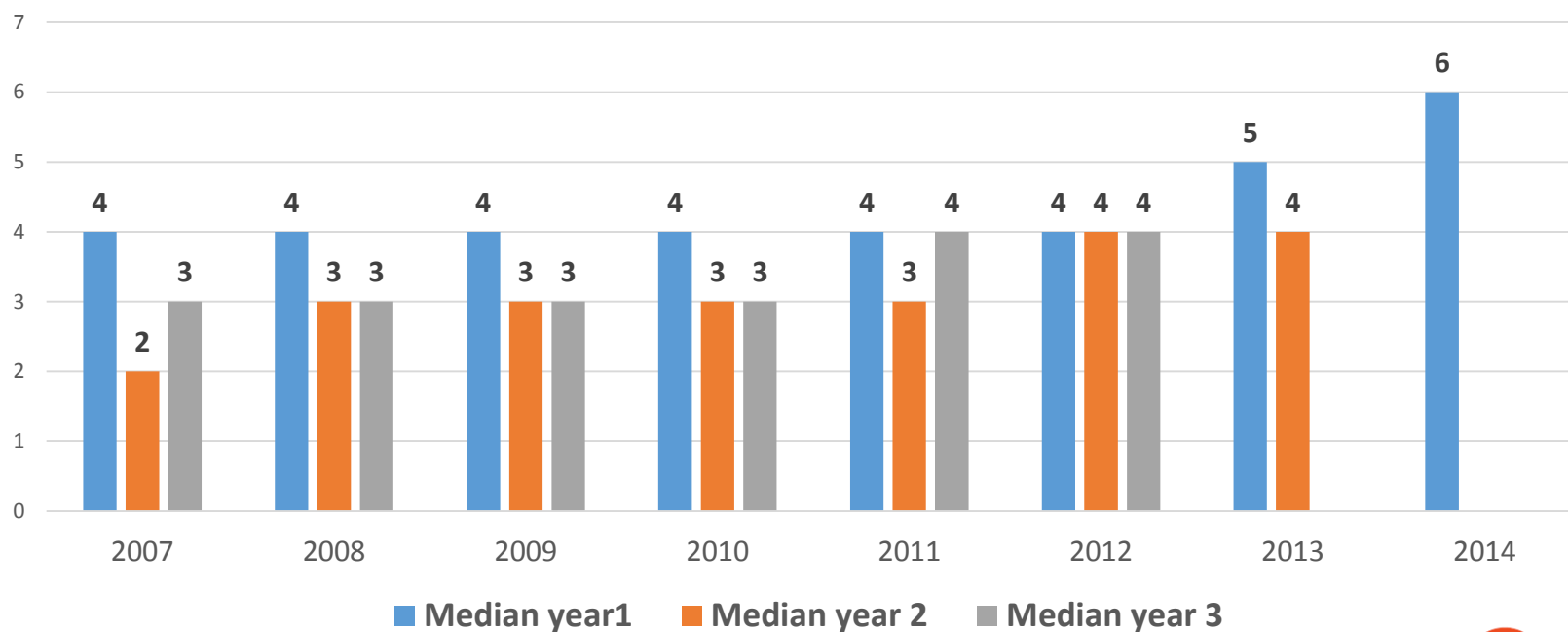




## Choice of treatment anti-VEGF per clinic in Sweden 2015



## Median number of injections year 2007-2014



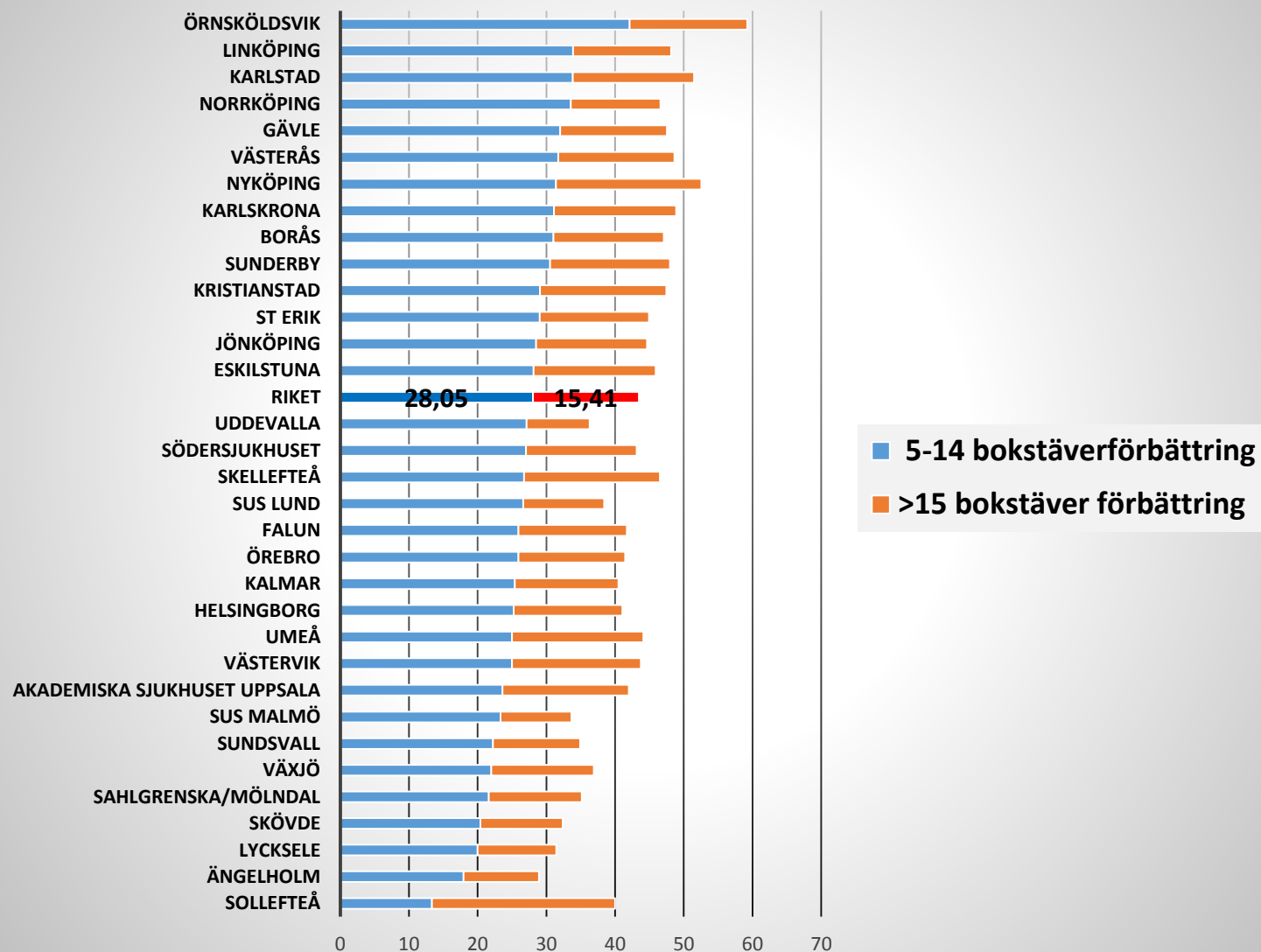
## Median number of injections for different anti-VEGF drugs

	Median number of injection	Number of Eyes
<b>Ranibizumab</b>	<b>4</b>	<b>749</b>
<b>Bevacizumab</b>	<b>5</b>	<b>740</b>
<b>Aflibercept</b>	<b>6</b>	<b>1501</b>
<b>Combination of different anti-VEGF</b>	<b>8</b>	<b>519</b>

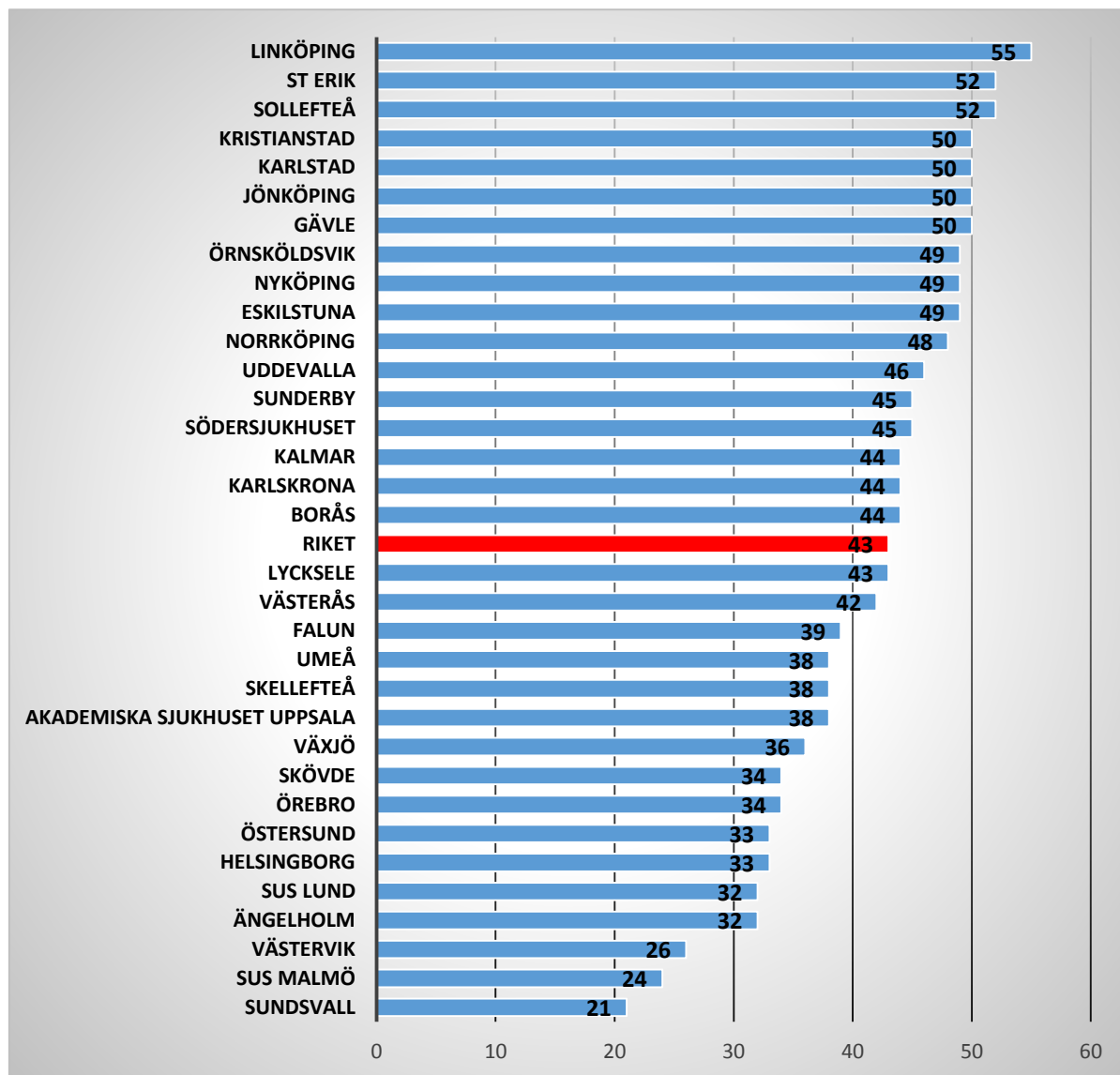


## Outcome measure : improvement in visual acuity

### % improvement 5-14 letters och $\geq 15$ letters 2007-2014

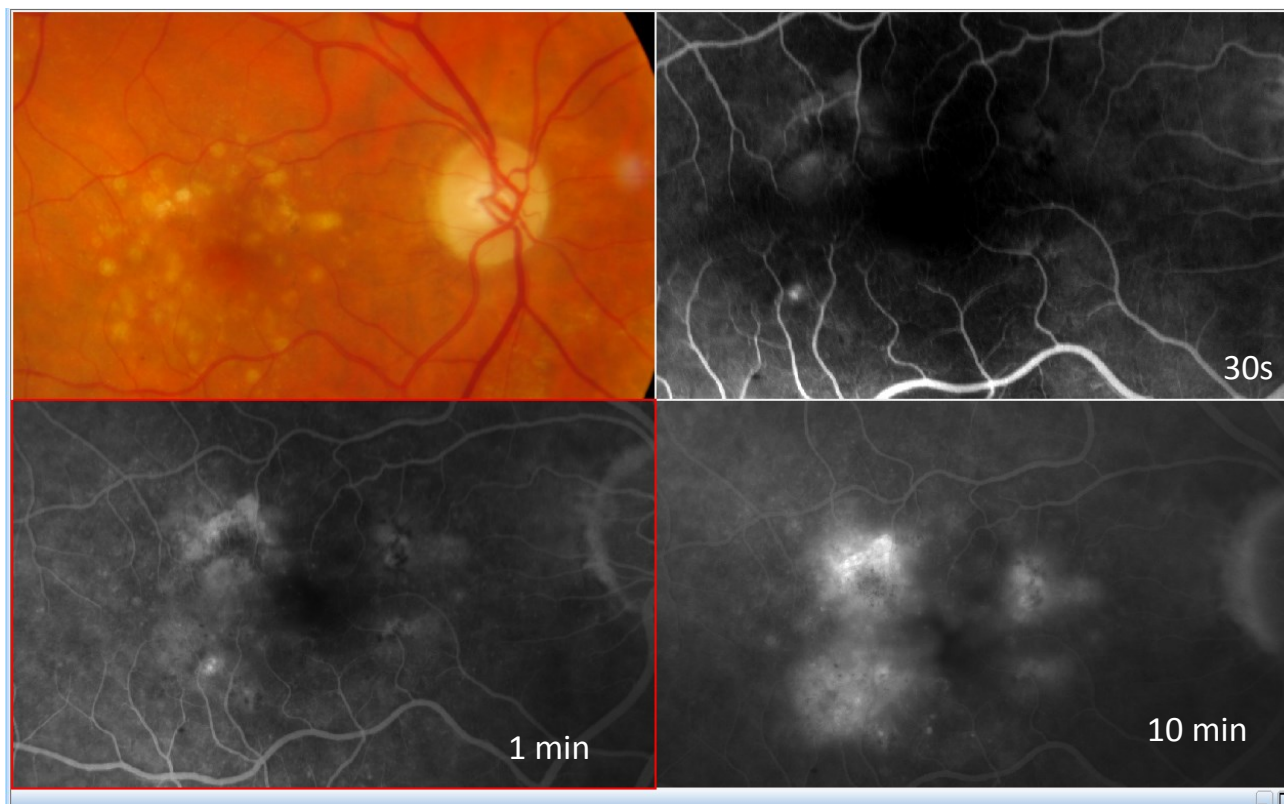


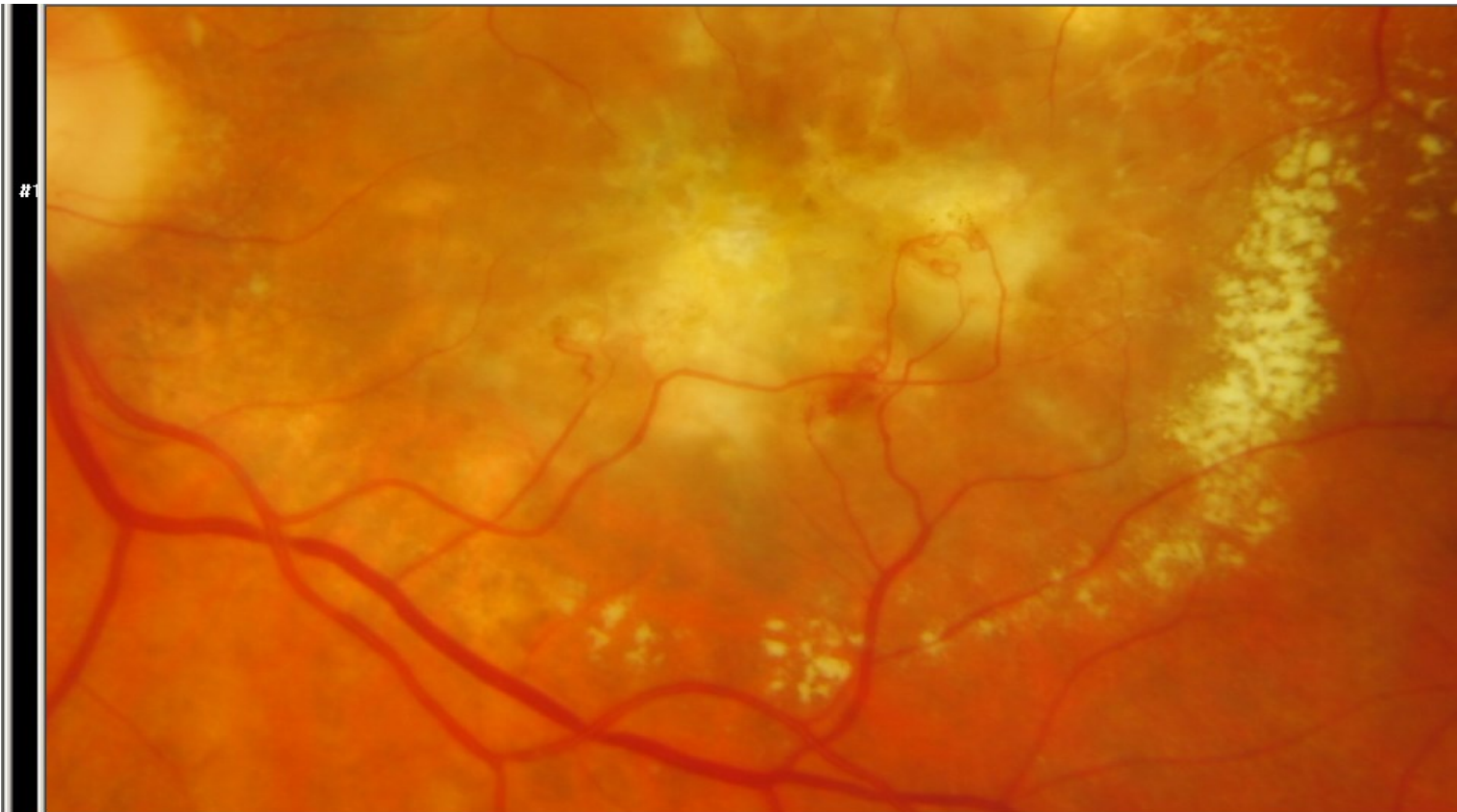
## Visual acuity $\geq 0,5$ ( vision for driving) after 1 year of treatment %



43 % of treated eyes have a visual acuity of more than 0,5 after 1 year of anti-VEGF treatment in Sweden

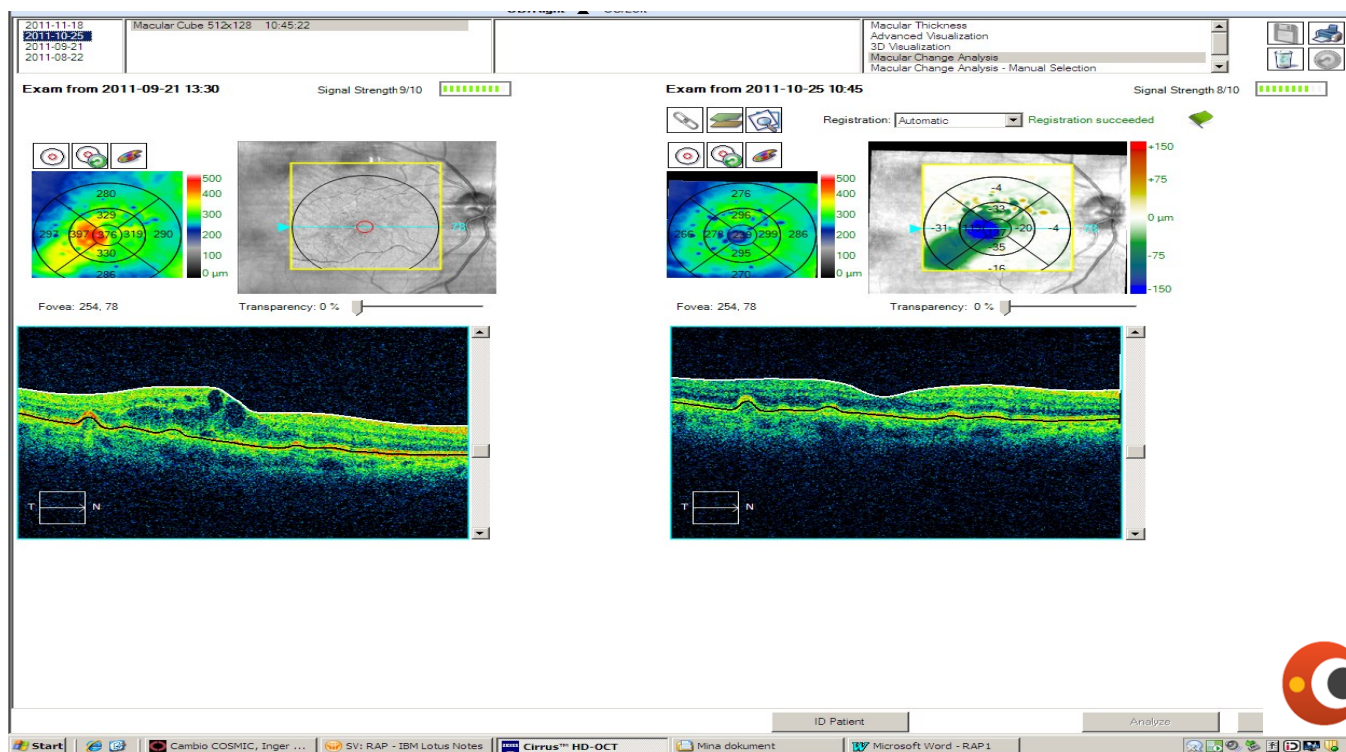
Female born 1926 wet AMD (RAP) diagnose right eye september 2011.  
Preop VA: 67 letters ~ 0,65 and nearvision 8 p.  
Left eye wetAMD, VA 0.01.



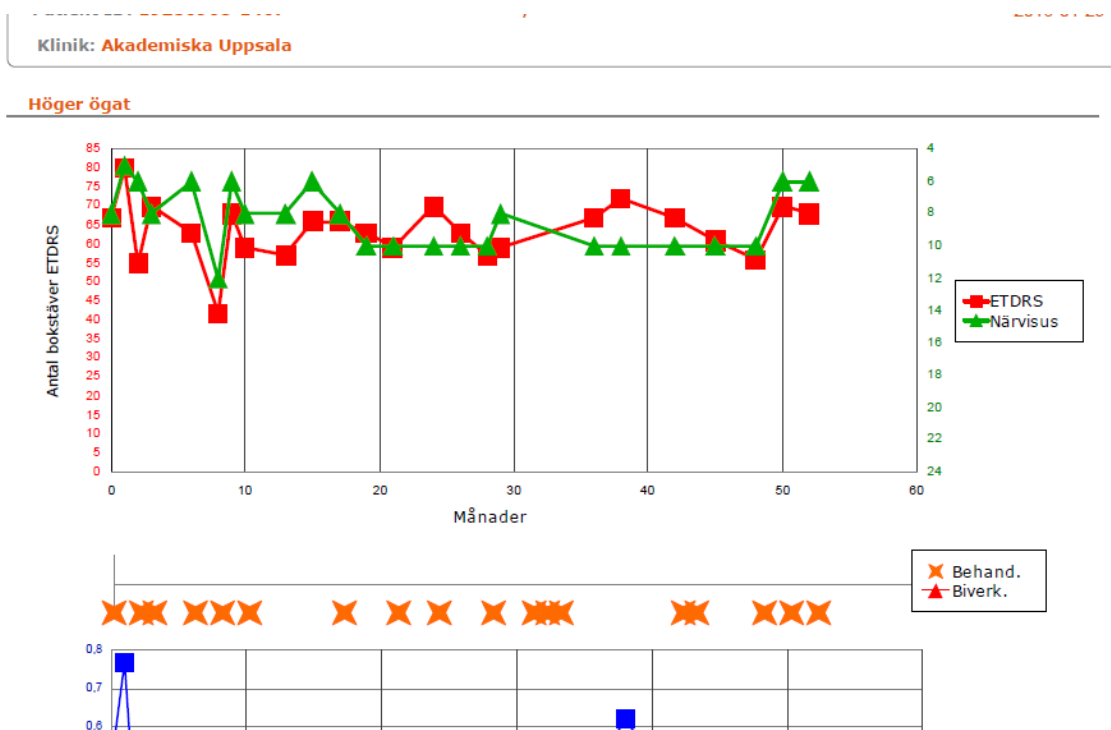


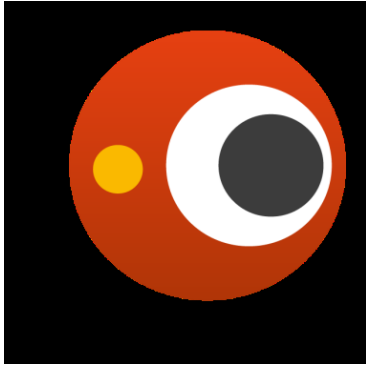
After 3 injections anti-VEGF : 67 letters ~ 0,4 och 6 p.  
Continued treatment total 18 injections

2016-01-05 VA 68 letters , 0,5 and reading 6p



## Individual patient report Swedish Macula Register





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No financial interests



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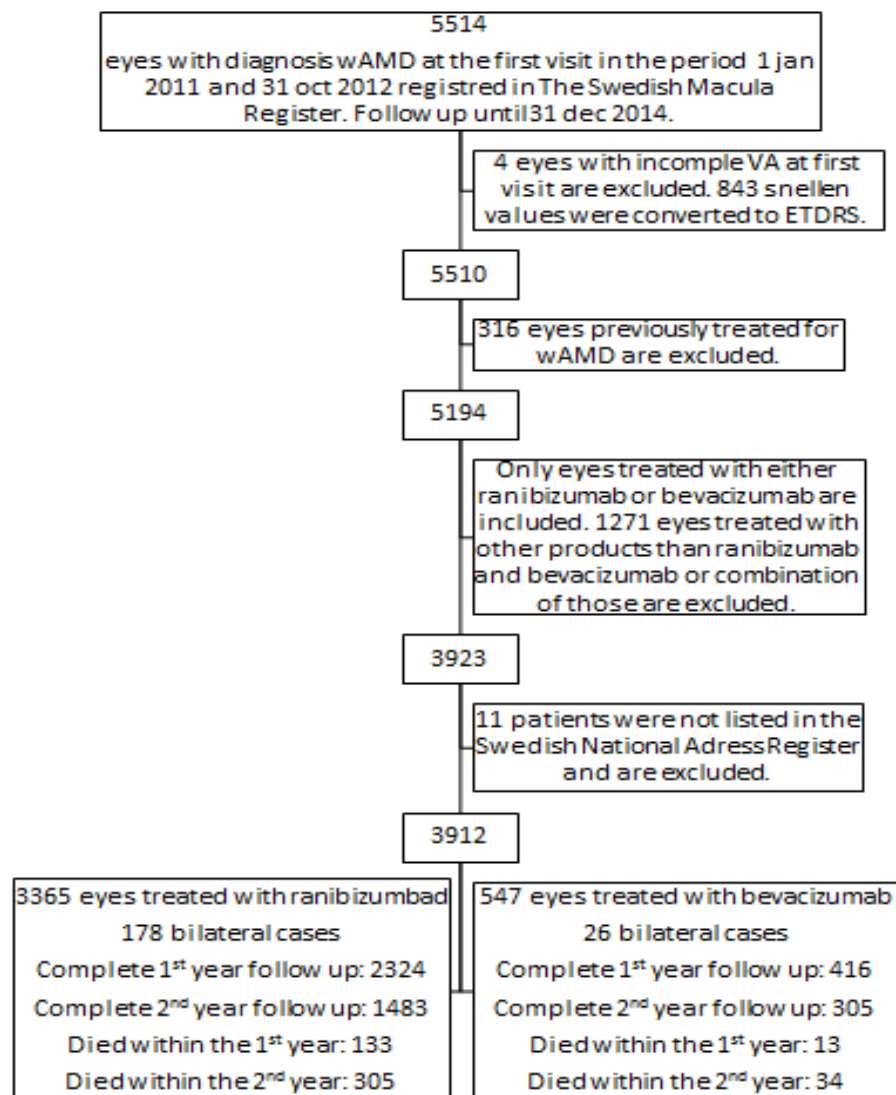


# Purpose

- To investigate how patients with neovascular age-related macular degeneration (neovascular AMD) treated with ranibizumab or bevacizumab respond to treatment in daily clinical practice.
- Risk of having poor vision (VA under 60 ETDRS letters or approximately 20/60 Snellen) is calculated for the treated eye after 1 and 2 years.
- Data from the Swedish Macula Register on the treatment received by 3 912 patients during 2011-2014 is reported.

# Methods/Material

- Treatment naïve patients with treatment start between jan 2011 to oct 2012 treated with anti-VEGF ranibizumab or bevacizumab for a two year follow up study period.
- Ranibizumab 3365 eyes and bevacizumab 547 eyes
- Baseline characteristics were age, sex, symptom duration before first visit and CNV sub-type.
- Two subgroups according to baseline VA (ETDRS), VA < 60 letters at first visit or  $\geq 60$  letters
- In Sweden, low vision centers provide visual rehabilitation in case of visual acuity of the better-seeing eye less than 60 letters ( 0.3 (approx 20/60) Snellen).



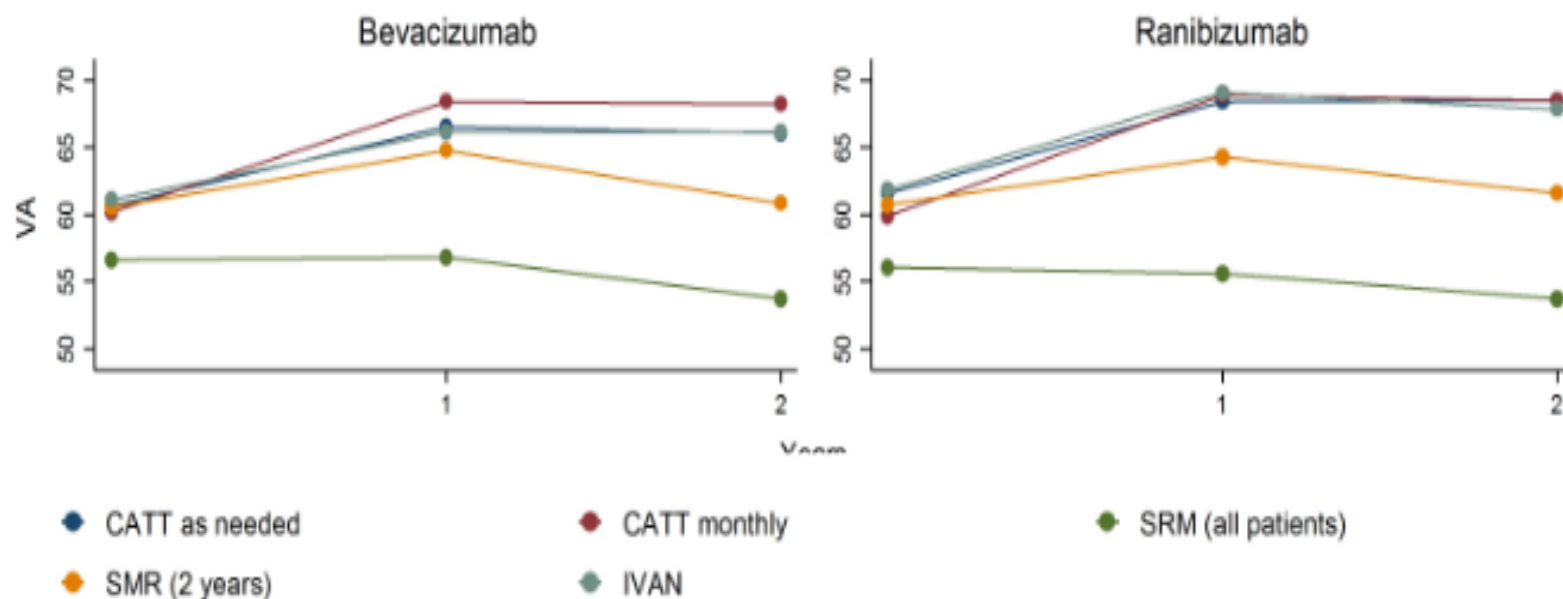
# Results baseline characteristics

- Baseline characteristics were similar between ranibizumab and bevacizumab treated patients.
- The median age of the patients was around 79 years old and more than 60 % of the patients were women.
- Approximately 40 % of the patients experienced neovascular AMD symptoms for less than 2 months before their first visit.
- The median VA at first visit was approximately 58 ETDRS letters (SD 15 letters).
- Around 57 % of the patients had VA less than 60 letters at their first visit.

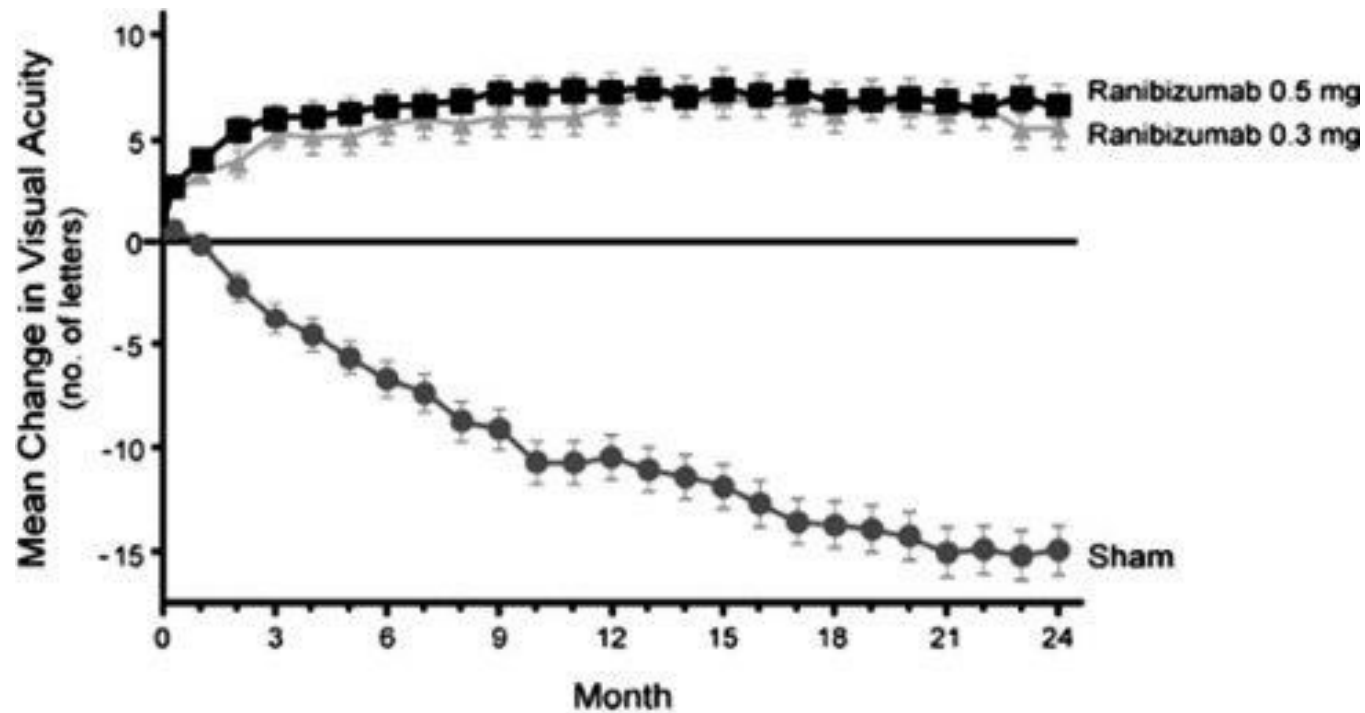
# One and two year results

- Similar in both treatment groups.
- Median number of injections year 1 is 5.
- Total number of injections after year 2 are 7(SD 3.2) and 8(SD 4.5) for ranibizumab and bevacizumab respectively.
- Median VA difference year 1 is 3 letters (SD 15 letters).
- At 2 years the median change in VA from the first visit is 2 (ranibizumab) and 1 (bevacizumab) letters (SD 17 letters).
- Median VA after 2 years is 65 letters

# Visual acuity -2 year results Swedish Macula Register compared to clinical trials

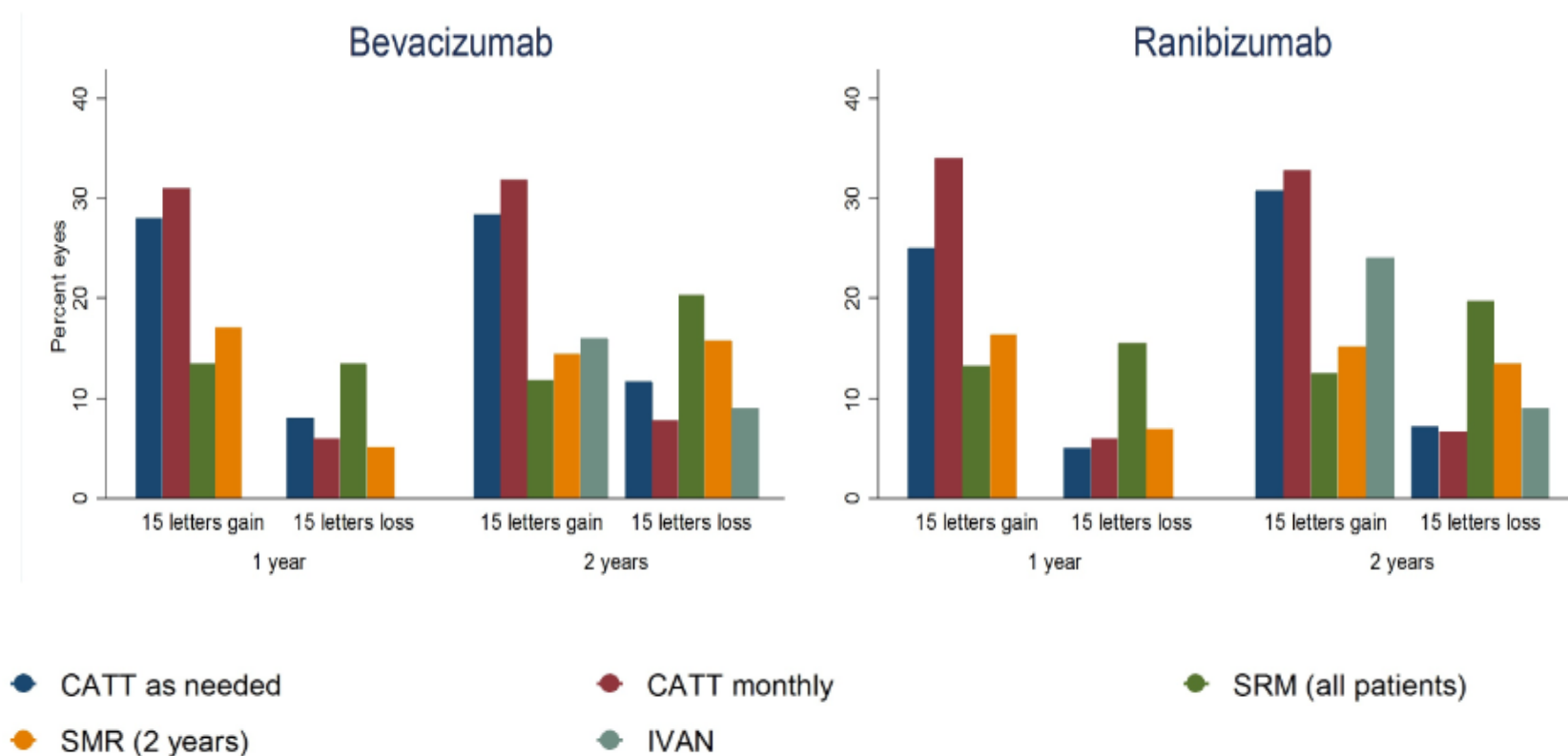


# Natural course for wet AMD mean change in Visual Acuity (VA)





# 15 letters gain/loss after 1 and 2 years



# Risk for VA < 60 letters ETDRS after anti-VEGF treatment

## VA < 60 ETDRS letters baseline

- 60% risk VA < 60 letters year 1 and year 2
- Patients older than 79 years have 18% higher risk of maintaining low VA
- No difference in risk depending on treatment choice

## VA ≥ 60 letters baseline

- 20% risk VA < 60 letters year 1 and 25% year 2
- Patients older than 79 years have 49% higher risk year 1 and 38% year 2 of VA < 60 letters compared with younger patients
- No difference in risk depending on treatment choice

# Conclusions

- Treatment outcome depends on VA at first visit. For patients with  $VA \geq 60$  letters, the risk of having a VA lower than 60 letters after 1 or 2 years of treatment is around 20 %.
- For patients with low VA at first visit ( $< 60$  letters) the risk is around 60%.
- The risk of having  $VA < 60$  letters doesn't depend on the choice of treatment drug.
- Older patients have a higher risk of  $VA < 60$  letters compared to younger patients.
- We observe for patients with low VA at baseline that the risk of remaining with a low VA for patients that had more injections than average is similar to those that had fewer treatments. This requires further studies.

# Conclusions

- Treatment with anti-VEGF mainly maintains the VA level. Despite treatment, around 20 % (baseline VA >60 letters) and 40% (baseline VA  $\leq$ 60 letters) of the patients required vision rehabilitation after 1 and 2 years, respectively.

# The Swedish Macula Register projects

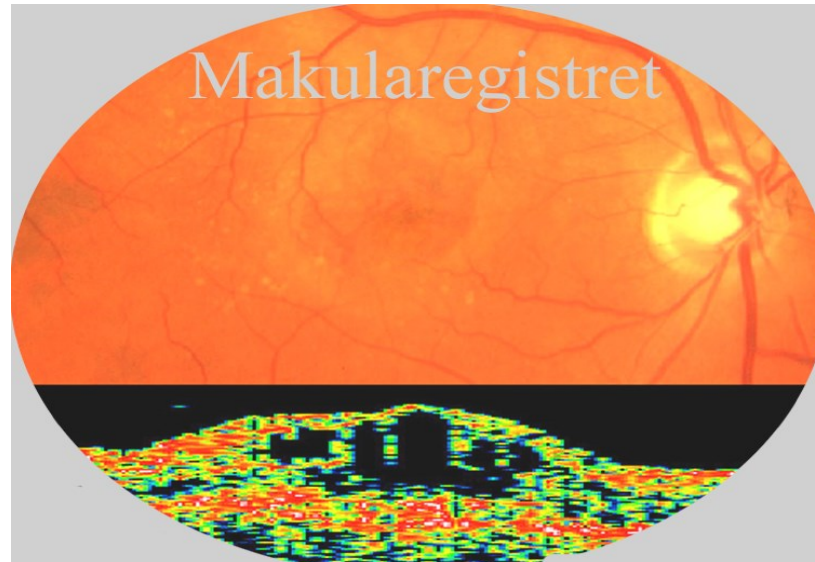
## *ST-project*

- Lower incidence of severe visual impairment after introduction of anti-VEGF in wet AMD - a population and register based study from northern Sweden (published 2016)
- Switching to Aflibercept in Ranibizumab Refractory Age-Related Macular Degeneration: a Real-World Experience from Sweden.
- Characteristics and prognosis for patients after treatment for wet

## *Research projects*

- Change in visual acuity and need for low vision rehabilitation after intra-vitreous treatment for wet Age-related Macular Degeneration - a register based study from the Swedish Macula Register
- Anti-VEGF- treatment for wetAMD: evaluation of treatment protocol and effect
- CATMAC Patients treated for wetAMD after cataract surgery
- Swedish Macula register– 7-year results
- Endophthalmitis register 3-year results
- Comparison 2 cohorts with different treatment regimens in Skåne
- Low vision < 0,1 – treatment results
- Do comorbidities cause under treatment in patients with wAMD?

Thank you for your attention!



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