

# Microalbuminuria and glomerular filtration rate in SGA born young adults

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**SGA and long-term GH treatment do not lead to microalbuminuria and do not negatively influence kidney function and blood pressure**

## Background

Low birth weight is linked to fewer glomeruli, which might lead to an increased risk for developing glomerulosclerosis, decreased renal function with a lower glomerular filtration rate (GFR) and increased microalbuminuria.

## Objective

To compare albumin excretion and GFR in 4 different groups of young adults, and to assess whether birth weight, catch-up growth or GH treatment has an effect on these parameters.

## Methods

Kidney function (GFR and urinary albumin excretion) and blood pressure were measured in 161 young adults, consisting of 4 different groups:

SGA born young adults with:

- GH treatment during childhood (SGA-GH)
- Persistent short stature (SGA-S)
- Spontaneous catch-up growth (SGA-CU)

AGA born young adults with normal adult height.

We measured urine creatinine and albumin and serum creatinine levels. GFR was calculated. All results were compared between the 4 groups.

Microalbuminuria: urinary albumin to creatinine ratio > 1 mg/mmol.

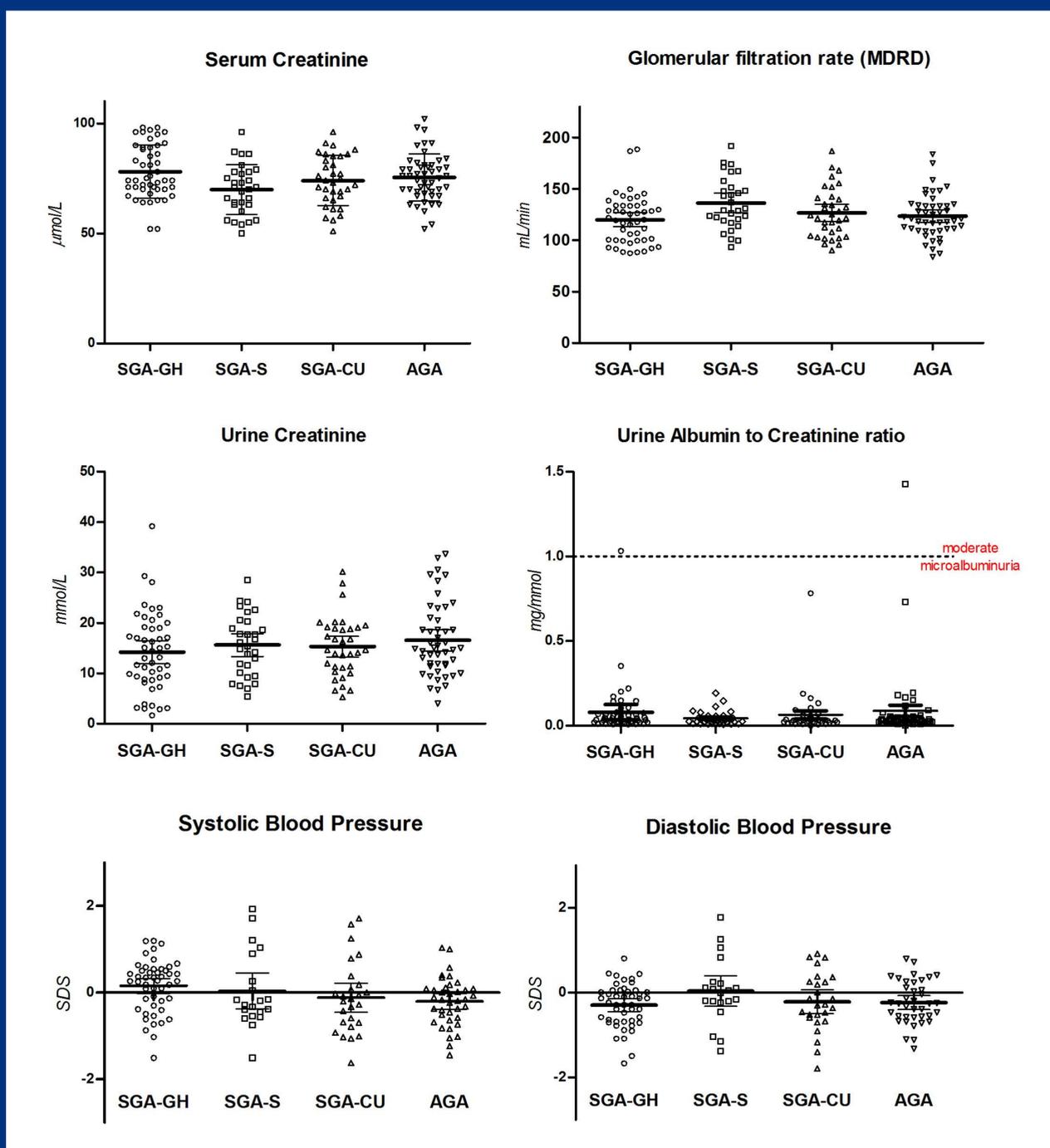
Participants had mean age of 20.7 years, which was similar in all groups.

## Results

Mean urine albumin levels were similar in all groups: 0.037mg/mmol in SGA-GH, 0.008mg/mmol in SGA-S, 0.023mg/mmol in SGA-CU and 0.033g/L in AGA. (p=0.058). Two participant had moderate microalbuminuria (1 SGA-GH, 1 AGA).

Estimated GFR was similar in all groups: 110.6mL/min in SGA-GH, 111.4 mL/min in SGA-S, 108.9mL/min in SGA-CU and 102.5mL/min in AGA (p=0.465)

No significant correlation was found between change in height SDS from birth to adult height and kidney function parameters at 21 years of age.



**Figure 1.** Serum and urine values for albumin and creatinine and blood pressure in SGA-GH, SGA-S, SGA-CU and AGA. Dotted line in "Urine Albumin to Creatinine ratio" indicates moderate microalbuminuria.

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