

# Cardiovascular risk in young patients with lupus: investigating metabolic biomarkers and the immunological phenotype

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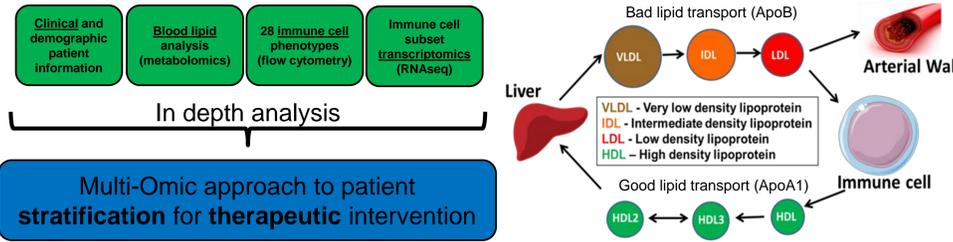


## Introduction:

- 15-20% of all systemic lupus erythematosus (SLE) patients have **juvenile-onset SLE (JSLE)**
- JSLE is characterised by **immune cell dysregulation**, chronic inflammation and an **increased risk of developing heart disease**
- Cardiovascular disease (CVD)** is the leading cause of mortality in JSLE not attributable to lupus flare
- Our previous work links **immune cell dysregulation** and **dyslipidaemia** in adult-SLE. Little is known about the role of **lipid metabolism** in JSLE

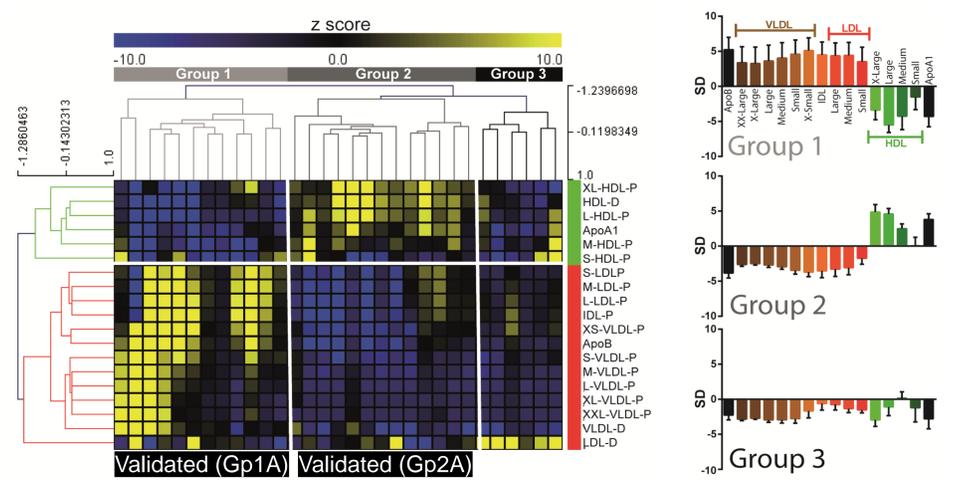
## Aims/Methods:

	JSLE (discovery)	JSLE (validation)	p-value
Total number	31	31	-
Age, mean (range)	19 (14-25)	19 (13-24)	0.8646

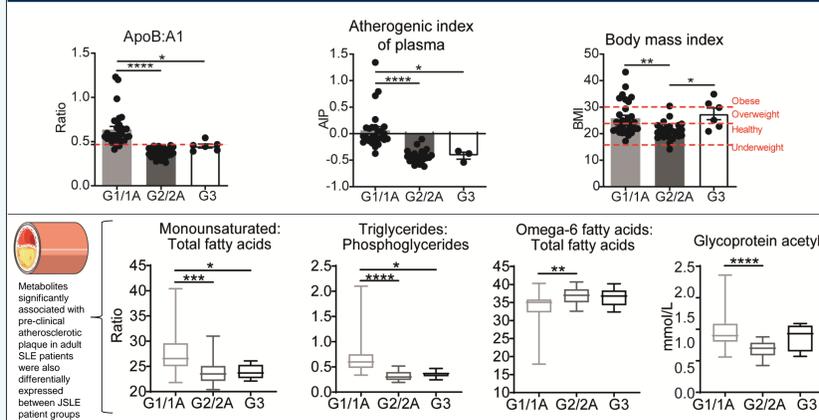


## Results:

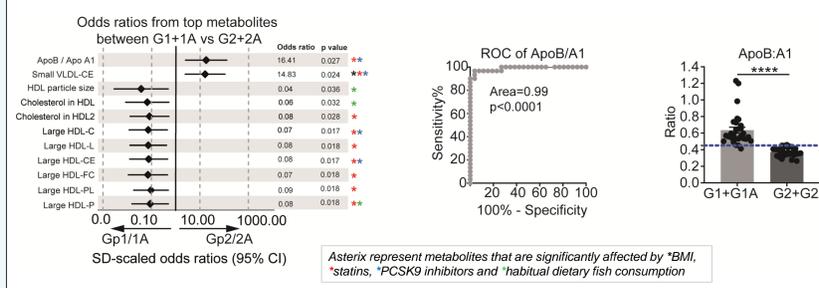
### JSLE patients can be stratified into 3 groups using in depth serum lipoprotein metabolomic analysis



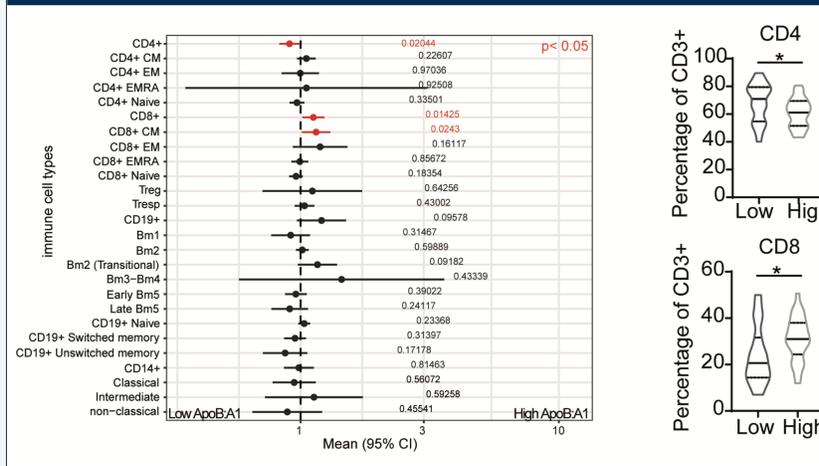
### JSLE patients in Group1/1A could be associated with increased cardiovascular risk



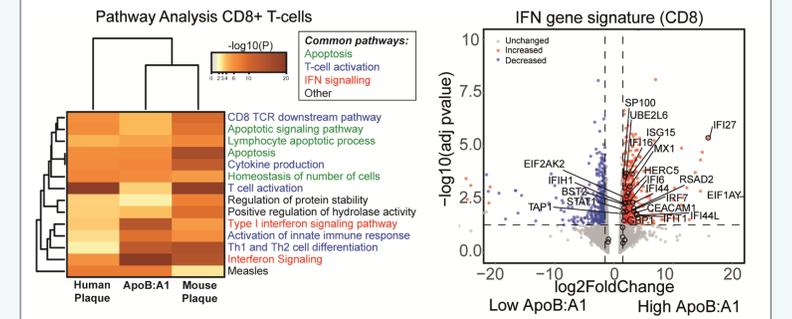
### ApoB:ApoA1 distinguishes Group1/1A from Group2/2A



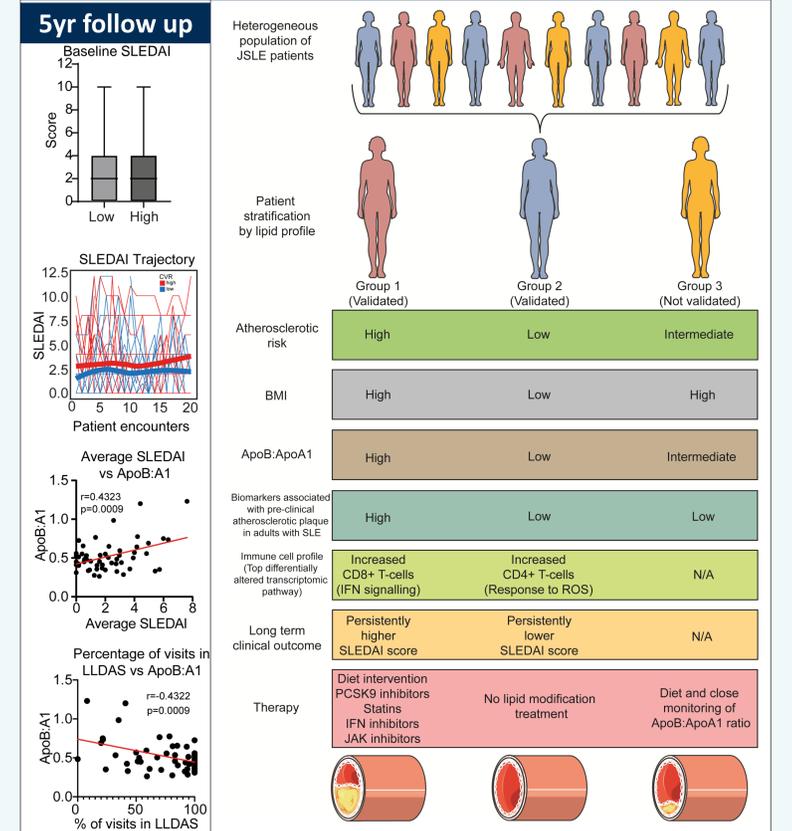
### High ApoB:ApoA1 ratio JSLE patients have increased circulating CD8+ T-cells



### Genetic pathways altered in CD8+ T-cells from human and mouse plaque are also altered in high ApoB:ApoA1 ratio patients



### High ApoB:ApoA1 ratio patients have a worsened longitudinal clinical outcome



**Stratified therapeutic intervention targeting lipid metabolism could be beneficial in treating patients with JSLE, reducing both inflammation and CVD**

