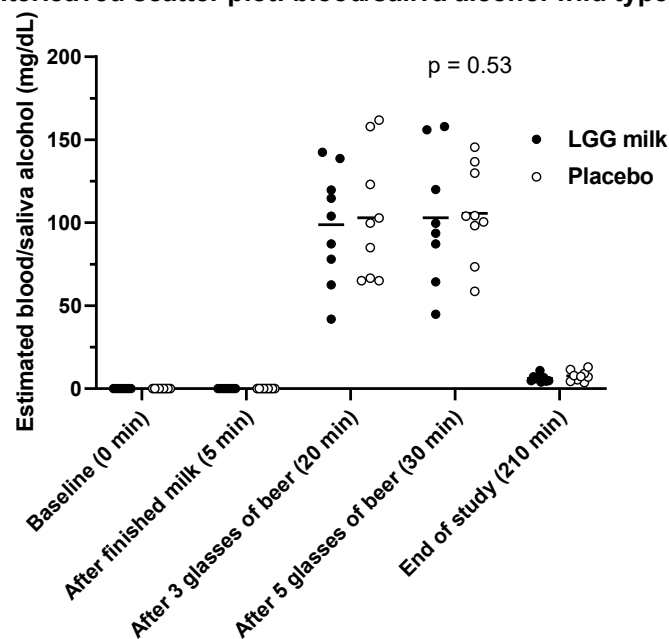


Figure S1

A Interleaved scatter plot: blood/saliva alcohol wild type (W)



B Interleaved scatter plot: Blood/ saliva alcohol Mutant (R)

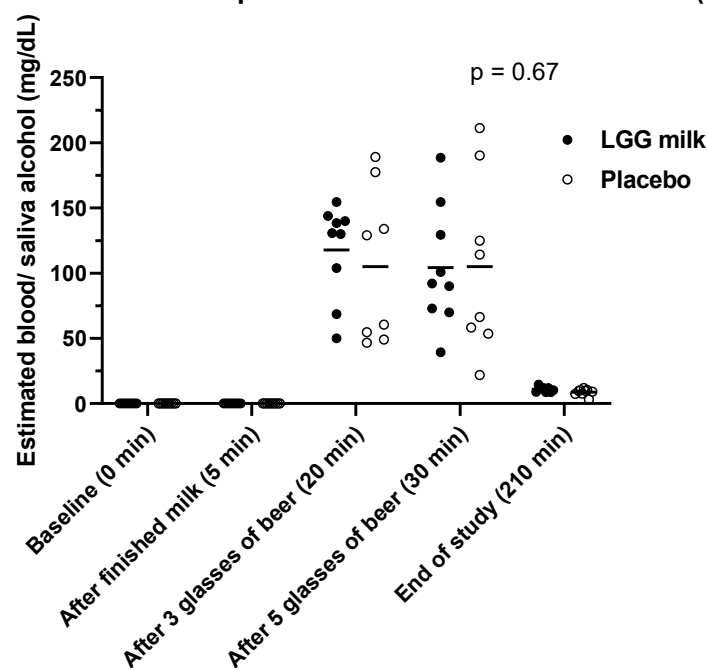


Figure S1: Blood/ saliva alcohol content (BAC) in wild-type and mutant *ALDH2*

Scatter plot shows blood/ saliva alcohol content (mg/dL) of all participants measured by a professional Breathalyzer at baseline (0 min), after finished milk (5 min), after consuming three glasses of beer (20 min), after consuming five glasses of beer (30 min) and at the end of the study (210 min) on the day of consuming LGG fermented milk (black circle) or placebo (white circle) before alcohol consumption in participants with wild-type **(A)** and mutant *ALDH2* **(B)**. The horizontal lines show means of blood/ saliva alcohol content. P-values were obtained from two-way ANOVA. Blood/saliva alcohol concentration represent the mixture of ethanol present in blood and saliva.

Figure S2

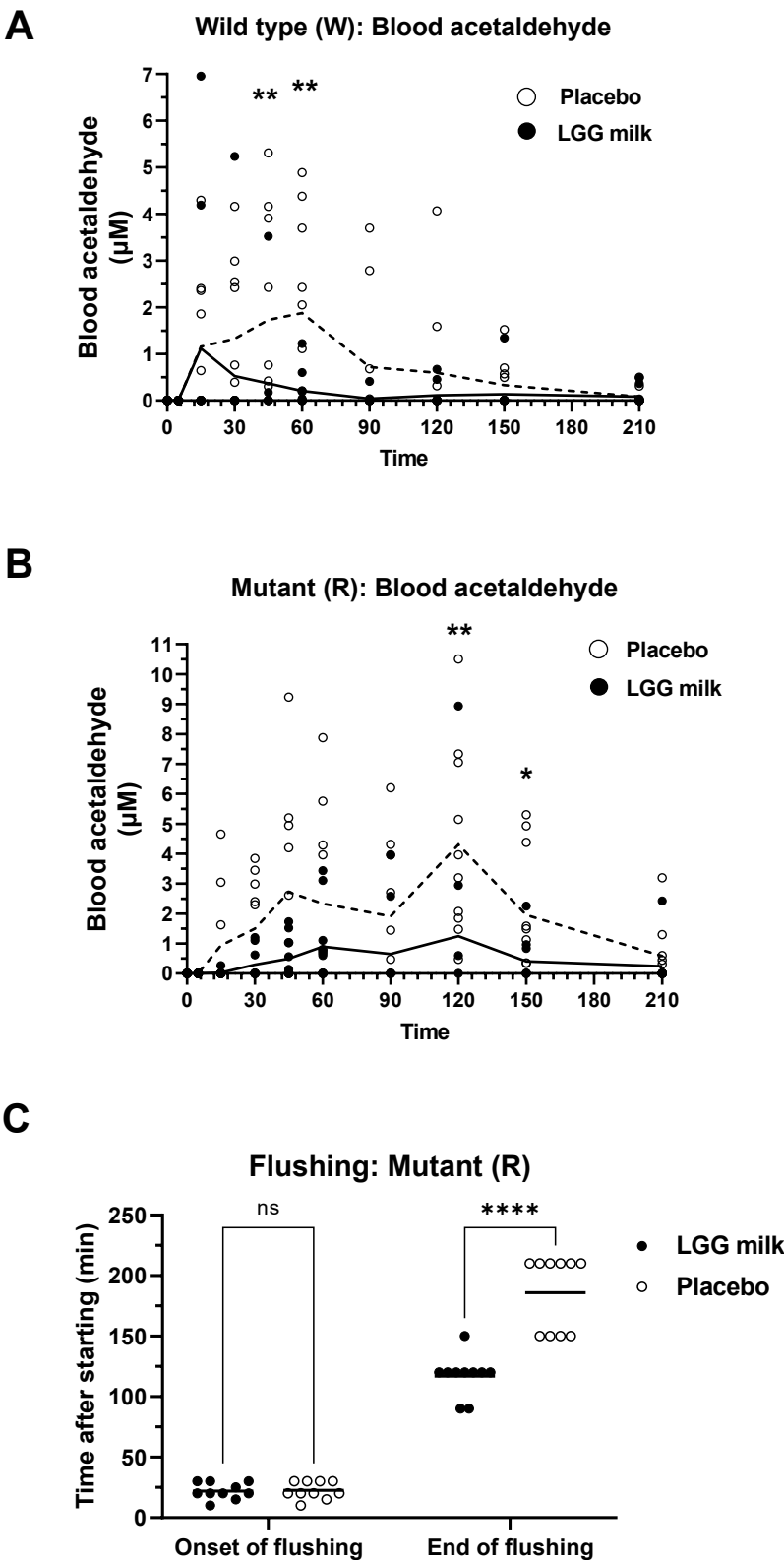


Figure S2: Change in blood acetaldehyde levels and alcohol flushing

Scatter plot shows blood acetaldehyde at 0, 5, 15, 30, 45, 60, 90, 120, 150 and 210 min of all participants after consuming LGG fermented milk (black circle) or placebo (white circle) before alcohol consumption in participants with wild-type **(A)** and heterozygous mutant *ALDH2* **(B)**. *P*-values were from multiple paired t-test. (*) and (**) shows $p < 0.05$ and 0.01 compared with the baseline. Scatter plot shows onset and ending time of alcohol flushing on the day of consuming LGG fermented milk (black circle) or placebo (white circle) in participants with heterozygous mutant *ALDH2* **(C)**. The solid black line and dash line show means of blood acetaldehyde after consuming LGG fermented milk and placebo, respectively. (****) show $p < 0.0001$; NS = non-significant, obtained from two-way ANOVA and Sidak's test.

Figure S3

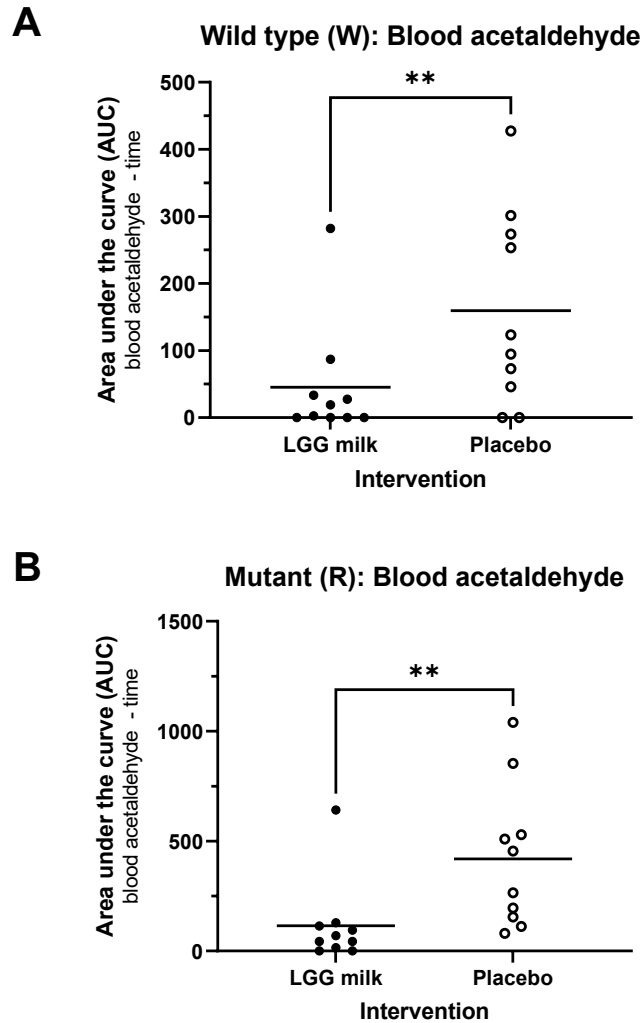


Figure S3: Response to LGG fermented milk for blood acetaldehyde

Scatter plot shows the area under the curve (AUC) of blood acetaldehyde – time of all participants on the day of consuming LGG fermented milk (black bar) or placebo (grey bar) before alcohol consumption in participants with wild-type **(A)** and heterozygous mutant *ALDH2* **(B)**. The horizontal lines show means of AUC. (*) and (**) show $p < 0.05$ and 0.01 , from paired t-test.

Figure S4

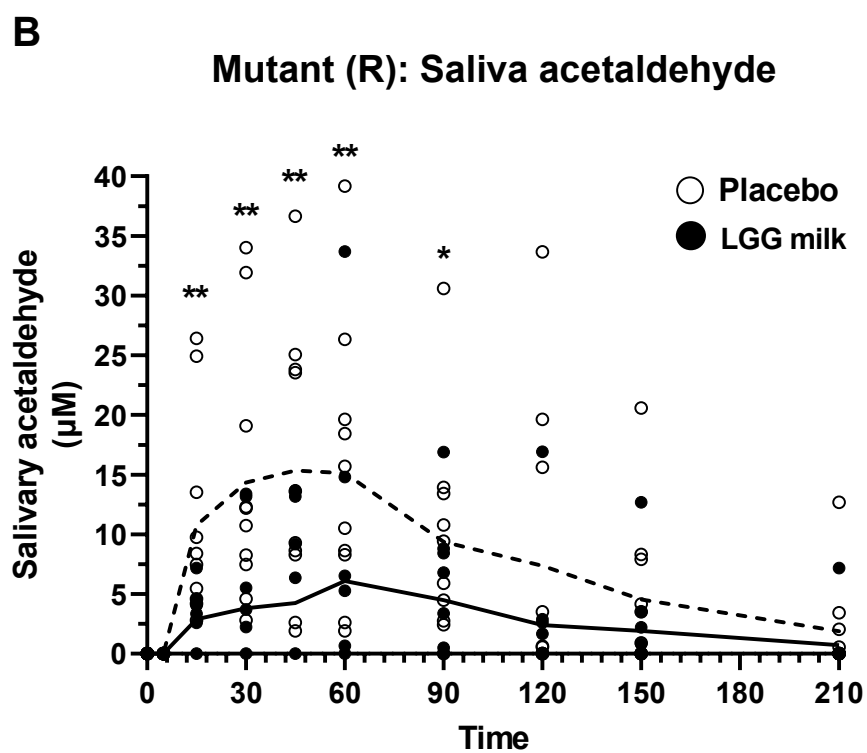
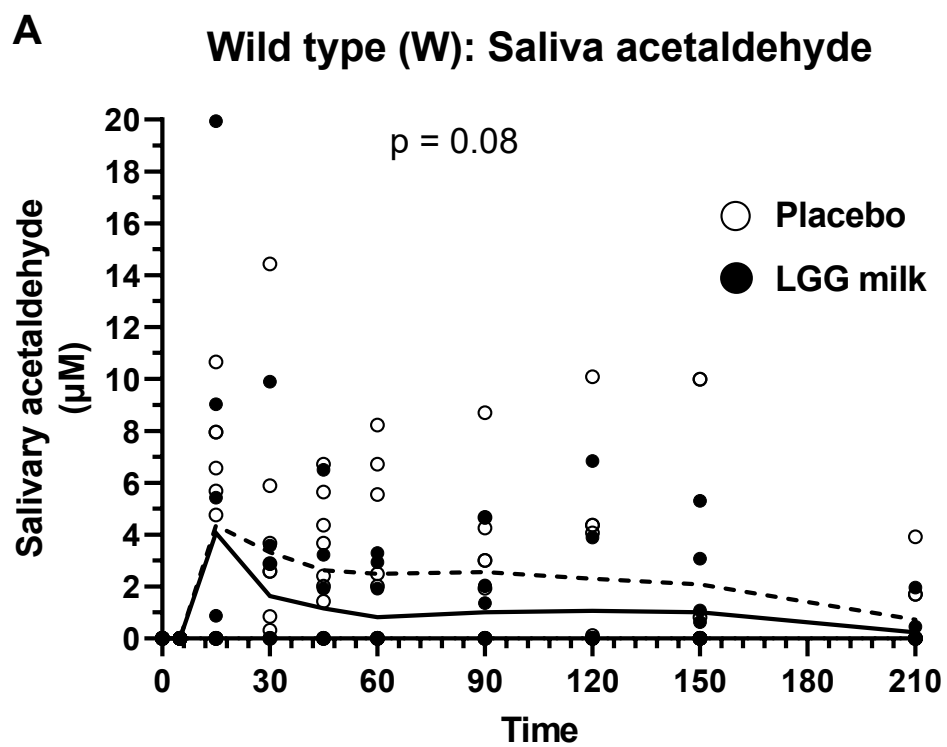


Figure S4: Change in salivary acetaldehyde levels

Scatter plot shows salivary acetaldehyde at 0, 5, 15, 30, 45, 60, 90, 120, 150 and 210 min of all participants after consuming LGG fermented milk (black circle) or placebo (white circle) before alcohol consumption in participants with wild-type **(A)** and heterozygous mutant *ALDH2* **(B)**. The solid black line and dash line show means of salivary acetaldehyde after consuming LGG fermented milk and placebo, respectively. (*) and (**) show $p < 0.05$ and 0.01 , from multiple paired t-test compared with the baseline.

Figure S5

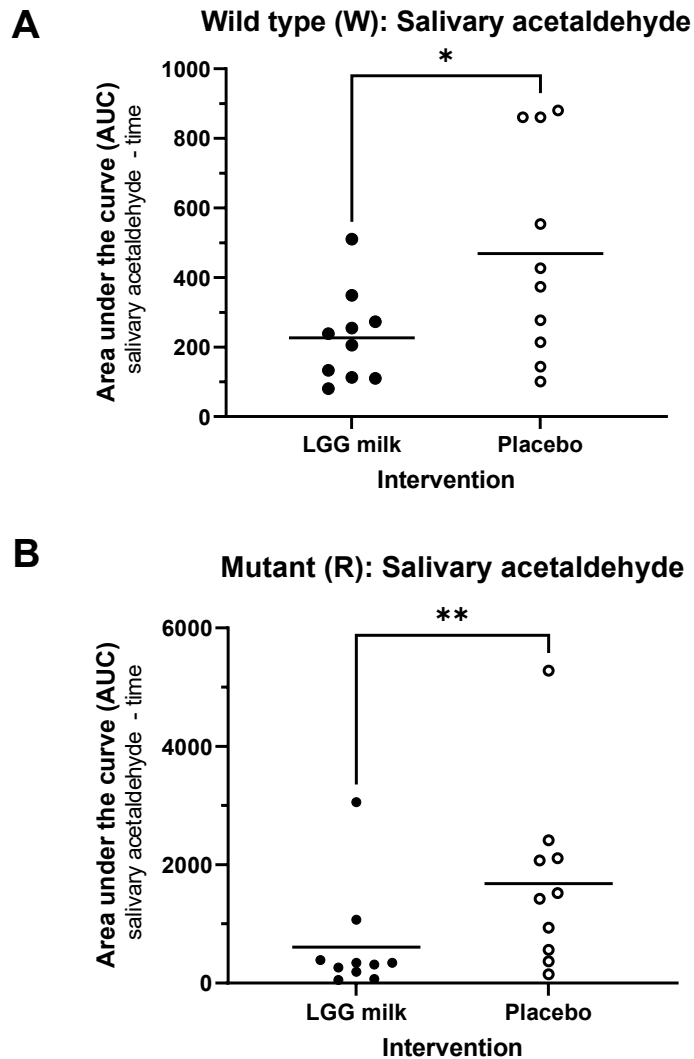
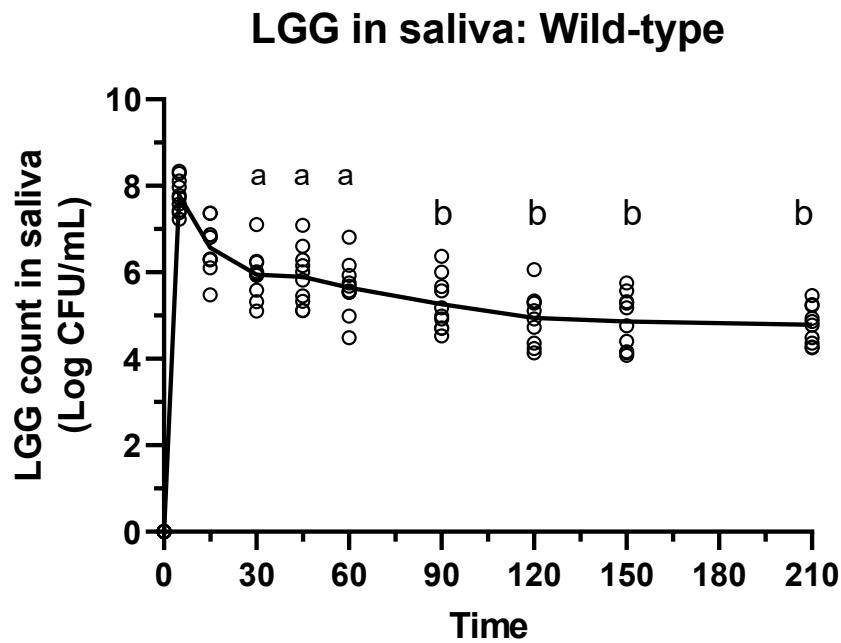


Figure S5: Response to LGG fermented milk for salivary acetaldehyde

Scatter plot shows the area under the curve (AUC) of salivary acetaldehyde – time of all participants on the day of consuming LGG fermented milk (black circle) or placebo (white circle) before alcohol consumption in participants with wild-type **(A)** and heterozygous mutant *ALDH2* **(B)**. The horizontal lines show means of AUC. *P*-values from the paired t-test (*) and (**) showed $p < 0.05$ and 0.01 .

Figure S6

A



B

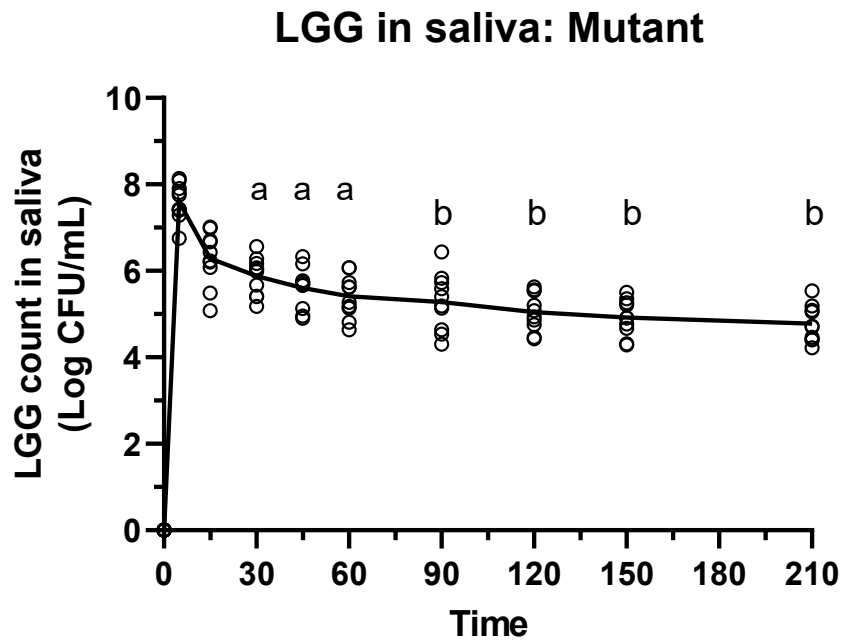


Figure S6: Change in LGG count in saliva

Scatter plot shows LGG count in saliva (log CFU/ mL) at 0, 5, 15, 30, 45, 60, 90, 120, 150 and 210 min of all participants after consuming LGG fermented milk before alcohol consumption, in participants with wild-type **(A)** and heterozygous mutant *ALDH2* **(B)**. *P*-values were from repeated measure ANOVA and Tukey's multiple comparisons test. The connecting lines represent means of LGG count in saliva. The time point with superscript letters (^{a, b}) represent significant difference from the baseline. Similar superscript letters indicate no significant differences, while different superscript letter indicate significant difference among time points.