

# Comparison of Reaction Rates of Sixteen Year-Old Blood Donors to Their High School Peers

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**Background:** In accordance with state law, we began collecting whole blood (WB) units from 16 year old high school donors (16YOD) with parental consent. Since donors in this demographic are well known to have higher reaction rates than the general donor population, we compared reaction rates of this new group of donors to other high school donors.

**Methods:** We began drawing 16YOD on a limited “trial” basis in 5/06. We compared reaction rates in 16, 17 & 18 year old donors from 5/06 –2/07. We then compared these rates to the reaction rates in 17 & 18 year old donors the previous year (5/05 –2/06).

Comparison of Reaction Rates of High School Blood Donors (5/06-2/07 and 5/05-2/06)								
Age	Total # donors 06/07	Reaction rate (%) 06/07	Total 1st time donors 06/07	1st time reaction rate (%) 06/07	Total # donors 05/06	Reaction rate (%) 05/06	Total 1st time donors 05/06	1st time reaction rate (%) 05/06
16	1070	8.4	1025	8.5	NA	NA	NA	NA
17	4245	3.7	3867	3.4	3920	3.0	3867	2.6
18	5765	.06	2545	0.8	5112	1.0	3545	0.9

**Results:** 16YOD exhibit a higher reaction rate, though the majority of reactions are minor (nausea, lightheadedness). While first-time donors exhibit a significantly higher reaction rate ( $p < 0.0001$ ), it does not fully account for the overall higher reaction rate for 16 YOD. A higher percentage of donors < 120 lbs. was present in the 16 YOD reacting population than in the 17 YOD reacting population (27% vs.13%). Additional analysis of the total donor population would be required to determine how significant the donor weight was in the higher reaction rate of 16 YOD.

**Conclusion:** Our collections staff report the 16YOD population is more “professional” towards blood donation than their older peers. However, they exhibit a statistically significant higher rate of reaction ( $p < 0.0001$ ). The majority of these reactions are light with a similar reaction severity distribution among 16, 17 and 18YOD. Currently, the total number of 16YOD is only 20-25% that of the other age groups. Additional monitoring of reaction rates as the number of 16 YODs increase will provide a greater means of assessing contributing factors involved in the discrepant reaction rates between age groups.

