

LABORATORY MARKERS FOR ALCOHOL-RELATED DAMAGE

Test	Advantages	Disadvantages
<p>(GGT) Serum Gamma-Glutamyl Transferase (enzyme in liver, blood and brain)</p>	<ul style="list-style-type: none"> • non-specific indicator of liver disease • sensitivity 20–50% for consumption of 40g alcohol per day or more • raised before AST and ALT • has half-life of 14–26 days 	<ul style="list-style-type: none"> • low sensitivity — GGT may be elevated by medications, non-alcoholic liver disease, diabetes, obesity. A standard measure of liver function
<p>AST/SGOT (Aspartate aminoTransferase) ALT/SGPT Alanine aminoTransferase</p>	<ul style="list-style-type: none"> • reflects overall liver health • can be routinely obtained using standard laboratory measures 	<ul style="list-style-type: none"> • like GGT, elevation in one of these measures alone may not necessarily be due to alcohol consumption
<p>(CDT) Carbohydrate Deficient Transferrin (variant of the protein that transports iron)</p>	<ul style="list-style-type: none"> • sensitivity is 60–70%; specificity 95% (few false positives) • elevated levels specifically associated with the metabolism of alcohol and dependent on quantity consumed (detected at > 60g per day) • returns to normal on reduction of consumption (half-life of 15 days) 	<ul style="list-style-type: none"> • need to exclude uncommon liver disease e.g. primary biliary cirrhosis <p>(note: this test is not routinely available in clinical practice)</p>
<p>(MCV) Mean red Cell Volume</p>	<ul style="list-style-type: none"> • supportive diagnostic tool when used with LFTs 	<ul style="list-style-type: none"> • less sensitive than GGT – can be elevated by medications e.g. valproate, azathioprine, folate and Vit B 12 deficiency, liver disease, hypothyroidism, smoking
<p>Other laboratory measures</p> <p>Thrombocytopenia, elevated bilirubin, low albumin and a prolonged INR all indicate significant organ damage related to high alcohol intake (Dawe et al., 2002).</p>		

REFERENCES

Dawe, S., Loxton, N.J., Hides, L., Kavanagh, D.J. & Mattick, R.P. 2002, *Review of Diagnostic Screening Instruments for Alcohol and Other Drug Use and Other Psychiatric Disorders*, 2nd edn., Commonwealth Department of Health and Ageing, Canberra.