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MEDICAL PTY LTD

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To:

Dr Sharman Stone

Chairperson

Inquiry into the harmful use of alcohol in Aboriginal and Torres Strait Islander communities
House Standing Committee on Indigenous Affairs

Dear Dr Stone

Please find a submission by Unique Global Possibilities Medical Pty Limited that relates to the harmful health effects of alcohol.

Please note that the submission is medical in nature and contains supporting references that are from peer-reviewed medical publications. Unique Global Possibilities Medical Pty Limited cannot comment on all the Terms of Reference of the Inquiry and has no experience with Foetal Alcohol Syndrome and Foetal Alcohol Spectrum Disorders.

The submission is presented in good faith for use by the Committee and community leaders to support strategies to improve indigenous health and to limit alcohol consumption and misuse.

Yours sincerely

DR RJ BECKETT



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SUBMISSION TO INQUIRY INTO THE HARMFUL USE OF ALCOHOL IN ABORIGINAL AND TORRES STRAIT ISLANDER COMMUNITIES

Summary

Alcohol misuse results in well-known clinical conditions. Alcohol has recently been classified as a Group 1 carcinogen by the World Health Organization (WHO). Alcohol inhibits the secretion of the main hormone involved in the regulation of water balance in the body which leads to body dehydration and diminished body protein synthesis. Alcohol misuse also diminishes the synthesis of the plasma protein albumin – one of the most important proteins in the body. Plasma albumin in low concentrations has been correlated to premature death and death from a range of diseases including cancer, heart disease and stroke. There are several known ways to increase plasma albumin concentrations and to increase body hydration. These include (obviously) cessation of excess alcohol consumption, the ingestion of nutritionally valuable food, the consumption of clean drinking water (particularly water containing calcium and magnesium) and the provision of good body hygiene including medical, nursing and dental facilities (that is, the reduction of inflammatory processes).

Submission

Unique Global Possibilities Medical Pty Ltd is the Australian affiliate of a US corporation, Unique Global Possibilities, Inc. The US corporation has experience in the pathological and medical consequences of alcohol misuse and obesity in indigenous (First Nation) communities of Canada and the USA. The submission by Unique Global Possibilities Medical Pty Ltd relates to pathology and ill-health caused by alcohol misuse and provides the basis to develop medical and nutritional strategies to minimise or prevent alcohol related pathology and disease. The submission covers those Terms of Reference of the Inquiry that relate to health. No comments are made on the reasons for alcohol misuse or the social consequences of alcohol misuse.

Acute and chronic alcohol misuse result in clinical conditions which are well described in the medical literature. These conditions have well defined and well known pathologies. In addition, alcohol (ethanol) is classified as a Group 1 carcinogenic compound by The International Agency for Research on Cancer (IARC) which is part of the World Health Organization (WHO).

The submission by Unique Global Possibilities Medical Pty Ltd relates to findings from medical trials with indigenous communities in Canada and the USA coupled with a Therapeutic Goods



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Administration (TGA) and World Health Organization (WHO) registered clinical trial conducted at the prestigious St Vincent's Hospital in Sydney into the appropriate consumption of water and consequent optimal hydration. These findings have helped to unravel how alcohol (ethanol) alters the complex physiology of the body which leads ultimately to pathology and ill-health. The findings also provide a basis to develop medical and nutritional strategies to minimise or prevent alcohol related pathology and disease.

It is known that alcohol (ethanol) is a potent inhibitor of the secretion in the brain of the hormone vasopressin. Vasopressin (antidiuretic hormone, ADH) is the main hormone involved in the regulation of hydration and water balance in the body (strictly, body fluid osmolality). Vasopressin release from the posterior pituitary gland of the brain is diminished by alcohol. Inhibition of vasopressin secretion and diminished vasopressin release result in diminished reabsorption of water from kidney collecting ducts, excess water loss in urine and mild to severe body dehydration. It is considered that when alcohol is consumed, the volume of body water lost exceeds the volume of intake of alcoholic beverage. There is much medical evidence that dehydration is catabolic in the body and, in particular, dehydration diminishes the synthesis of essential proteins. The indigenous people in Canada and the USA who misused alcohol showed various signs of dehydration. It is reasonable to assume that dehydration due to alcohol misuse may be prominent in hotter climates.

Dehydration affects all body cells, tissues and organs including the brain. Body dehydration is exacerbated by hot weather.

It is known also that excess alcohol consumption, independent of the effects of dehydration, directly diminishes the synthesis of essential proteins in the liver. Much work has been completed establishing that alcohol diminishes the synthesis of the essential plasma protein albumin. Excess alcohol consumption inhibits the synthesis of albumin completely. See a peer-reviewed article by European researchers on the inhibition of albumin synthesis due to excess wine consumption [[Abstract in PubMed: http://www.ncbi.nlm.nih.gov/pubmed/9446843](http://www.ncbi.nlm.nih.gov/pubmed/9446843)] One bottle (750ml) of wine 'profoundly impaired hepatic protein metabolism'.

Why is a diminished synthesis of the plasma protein albumin important?

Because of its central role in the body, plasma albumin has been studied extensively – possibly more than any other protein in the body. Albumin accounts for about half of the soluble protein content of blood. It is a blood carrier for many important hormones in the body, including thyroid hormone and steroid hormones, as well as a blood carrier for calcium, magnesium, zinc, pharmaceuticals, bilirubin and fatty acids. It has a range of other essential functions including the buffering of pH variations. Plasma albumin is the most important circulatory antioxidant in the body. It renders potential toxins harmless and transports toxins



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to disposal sites. It appears to have a protective effect on the lining cells of blood vessels by decreasing the inflammatory process. Albumin plays a role in clearing toxic peptides (amyloid-beta peptides) which are precursors of Alzheimer's disease.

What is albumin's relation to health and healthy longevity?

According to peer-reviewed medical literature, a direct protective effect from the albumin molecule is suggested in a range of diseases including heart disease, stroke, cancer and cognitive impairment. After adjusting for other known risk factors, high plasma albumin is independently and significantly associated with lower risk of inflammation, lower risk of cancer mortality and **lower risk of mortality from all causes**. For a compendium of peer-reviewed medical research articles that correlate high plasma (serum) albumin levels to survival from cancer, heart disease and other diseases see:

<http://www.uniquegp.com/medical%20literature.html>.

Most cases of low plasma albumin are caused by alcohol misuse, malnutrition, liver disease, kidney disease and acute and chronic inflammatory processes. These conditions are often interrelated. Theoretically, correction of these conditions should lead to a rise in plasma albumin levels and improvements in health and longevity. It was identified in medical trials in indigenous communities in Canada and the USA that eliminating inflammatory processes, improving nutrition and improving hydration raised plasma albumin levels significantly. Simple procedures to diminish inflammatory processes such as body hygiene (washing face and hands, showering), oral health (cleaning teeth, access to dentists) and appropriate medical and nursing treatment of infections, injuries and wounds were significant in raising albumin levels. The consumption of water, in quantities to improve hydration, was particularly significant.

A clinical trial was conducted at St Vincent's Hospital, Sydney in relatively healthy women to ascertain biomarkers associated with water consumption and improved (optimal) hydration. The consumption of one to two litres of water per day (six to eight glasses throughout the day) altered several biomarkers considerably in a positive manner. Because of the complex functioning of the kidneys, some results appear counterintuitive. There were significant increases in serum sodium, serum potassium and serum magnesium levels (not dilution). There were significant increases in cell and tissue anabolism and significant correlations between increases in serum magnesium and increases in serum (plasma) albumin. For some significant results from the clinical trial with positive implications for health see <http://www.uniquegp.com/clinical%20trial%20results.html>.

It is to be noted from the clinical trial results that water needs to contain some calcium and magnesium ions for maximum benefit. Amongst a range of other benefits, the consumption



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of water containing calcium or magnesium ions stabilises parathyroid hormone levels (the hormone considered responsible for osteoporosis and correlated to high blood pressure). This was identified first in medical trials in indigenous communities in Canada and the USA. In addition, the higher the level of magnesium in drinking water the greater the increase in plasma albumin. Water from natural sources such as spring water, ground water, etc. often contains significant calcium and magnesium ions. No measurements have been made by Unique Global Possibilities Medical Pty Ltd on the constituents of historical/cultural (Australian) indigenous water supplies or current tank or town supplies. [It is to be noted that tank water in high rainfall areas contains little, if any, calcium and magnesium ions. It is to be noted also that water consumption is not the same as fluid or beverage consumption. Beverages (tea, coffee, soft drinks) either have mild diuretic effects or are hyperosmotic (concentrated in terms of osmotic substances) relative to body fluids and may contain little, if any, calcium and magnesium.]

Conclusions

It is possible to develop relatively simple medical and nutritional strategies to improve hydration and increase plasma albumin levels and to minimise or prevent alcohol related, and obesity related, pathology and disease. These strategies include:

1. Provide facilities to diminish inflammatory processes such as facilities for maintaining body hygiene and medical, nursing and dental facilities. [According to an Editorial in the Journal of The National Medical Association (USA) the (extra high) observance of good body hygiene raises plasma (serum) albumin to significantly high levels. See: [\[http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2594053/\]](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2594053/)
2. Provide nutritionally valuable food – certainly fruit, nuts and vegetables (high in magnesium). See US National Institutes of Health, Health Professionals Magnesium Fact Sheet. [\[http://ods.od.nih.gov/factsheets/Magnesium-HealthProfessional/\]](http://ods.od.nih.gov/factsheets/Magnesium-HealthProfessional/)
3. In particular, provide clean drinking water in sufficient quantities to improve body hydration. This water is best sourced from natural sources that provide calcium and magnesium ions in water such as spring water, ground water, etc. Dehydration affects all body cells, tissues and organs including the brain.
4. Because of alcohol's toxic effects and dehydrating effects on body cells, tissues and organs and subsequent negative effects on health, **restrict access to alcohol or decrease the concentration of alcohol in drinks** (until such times as personal healthy decisions can be made).

For more detailed information, view the Unique Global Possibilities, Inc. website: www.uniquegp.com or contact the Research Director, Dr Russell Beckett, at rbeckett@uniquegp.com.