Preserved colonic meal response and functional evidence for anastomotic nerve regeneration in patients with normal bowel function following anterior resection

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Introduction Symptomatic change in bowel habit following distal colorectal resection is termed anterior resection syndrome (ARS) and may be related to abnormal motility resulting from failure of the myenteric plexus to re-establish across new anastomoses. A key facet of normal motility is the colonic meal response.

Aims First, to establish whether patients with no symptoms of ARS have a normal colonic meal response; second, to determine whether coordinated pressure wave propagation occurs across colorectal anastomoses in these patients.

Methods A fibre-optic manometry catheter was endoscopically placed within the distal colorectum of 15 patients (6 males; median age 68y/o) noting the point at which it crossed the anastomosis. A 2-hour baseline period of manometry recording was followed by administration of a 700 kCal meal and a further 2 hours of recording. Data were examined for the presence of retrograde and antegrade propagating sequences (PS). This was compared with data previously acquired from 11 healthy controls (3 males; median age 53y/o) using an identical technique.

Results Catheter displacement occurred in 3 patients. An increase in postprandial PS activity was observed in patients (p<0.001); this meal response did not differ from controls for retrograde (p=0.324) or antegrade PS (p=0.716). Retrograde and antegrade PS travelled across colorectal anastomoses in 11/12 and 8/12 patients respectively.

Conclusion Patients without ARS demonstrated a colonic meal response which did not differ from healthy controls. Pressure waves traversed the site of anastomosis in coordination. This provides functional evidence for anastomotic nerve regeneration and restoration of normal motility following distal colorectal resection.
Bitter taste receptors within the gastrointestinal tract

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Introduction In humans, bitter perception is associated with toxicity and is detected by 25 different bitter taste receptors (TAS2R). These receptors have been identified in an increasing range of cell-types and tissues including enteroendocrine cells of the gastrointestinal (GI) tract mucosa. Activation of these receptors in enteroendocrine cells causes the release of gut peptide hormones involved in the regulation of GI function and appetite e.g. Cholecystokinin (CCK). Little is known about the distribution of these receptors within the GI tract.

Method 300 mucosal biopsies (3mm) from the stomach (fundus, body and antrum), duodenum (D2), duodenum (D4) or proximal jejunum, terminal ileum, colon (ascending, transverse and sigmoid) and rectum were collected from healthy volunteers undergoing routine gastroscopy or colonoscopy. Semi quantitative expression of mRNA for specific TAS2Rs was determined using reverse transcriptase polymerase chain reaction (RT-PCR) in collected samples prior to a planned quantitative PCR study currently underway. Human mRNA libraries of whole stomach, small intestine and colon were also analysed using RT-PCR.

Results Preliminary data shows that TAS2Rs are present in the stomach, small intestine and colon and may exhibit regional variations in relative expression levels depending on the specific receptor type examined.

Conclusion Our preliminary data would suggest that bitter sensing can occur throughout the GI tract with the potential for regional variation in what type of bitter compounds can be detected. Our aim is to map this regional variation to better understand the GI tract chemosensory system and its relationship to GI function and the gut-brain axis.

Spontaneous maturation of organoids grown from isolated human colonic biopsies

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Background Until recently, studies of intestinal epithelial function have employed immortal cell lines. The intestinal epithelium is complex, consisting of distinct cell types, derived from stem cells in the base of the crypts. Recently, the stem cell niche
has been defined and utilised to grow primary intestinal epithelial cultures. We have used that technique to grow primary cultures of human colonic epithelium.

**Methods** Crypts isolated from endoscopic biopsies of the colonic mucosa were transferred to Matrigel and incubated in growth media. Gene expression was determined by qPCR and organoid structure by confocal microscopy and histology.

**Results** Within 24h cells in the upper 60% of the crypts underwent apoptosis, while the lower 40% of the crypt formed a circular organoid. Passaging by mechanical dissociation removed dead cells and resulted in the growth of thin, spherical organoids. Culture for 15 days led to larger, thick-walled spherical or budding organoids, accompanied by the development of a columnar epithelium and appearance of luminal mucus. Transcript expression at days 4 and 15 demonstrated changed expression of key genes associated with differentiation and maturation of the epithelium. In particular, there was increased expression of MUC2 transcript, which is associated with goblet cells and mucus secretion in the native colonic epithelium.

**Conclusion** This technique allows us for the first time to grow, store frozen and regrow organoids resembling the colonic epithelium of individual patients, and to study different functional aspects of the epithelium in various disease groups, including IBD and SpA, based on the genetic background.

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**Patient preferences for care in end stage liver disease**

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**Introduction** Mortality from end stage liver disease (ESLD) is higher than for many cancers, but little information is available regarding patient preferences for care towards end of life. The objective of this study was to explore patient understanding of prognosis and preferences for care in ESLD.

**Methods** Patients with advanced Child-Pugh B or C cirrhosis, without hepatocellular carcinoma, were identified from clinical databases. Postal questionnaires were sent to eligible patients.

**Results** Eighteen (37%) out of 49 questionnaires were returned. The average age of eligible patients was 60 (41-84) and the average MELD was 15 (8-27). Fourteen (78%) respondents felt informed about their medical condition, seven (39%) thought their health would be stable over 12 months, seven thought their health would improve, three (17%) anticipated a deterioration. Thirteen (72%) patients did not recall a conversation with their specialist regarding prognosis. Thirteen had not
discussed their end of life treatment preferences, should they lose capacity, with their specialist.

In terms of information needs, seventeen (94%) patients would want to know if their condition was life-limiting. Seventeen considered it important to receive detailed health information, with 100% choosing to speak with their specialist regarding health care at the end of life. 16 (89%) considered it important that palliative care be offered to patients with ESLD.

**Conclusion** Patients with ESLD may not be as aware of their prognosis as they would like to be. Overwhelmingly patients want detailed information and they want it from their specialist. More research needs to be done to determine whether we are meeting the needs of patients with ESLD.

**Osteoprotegerin: a pro-inflammatory role in IBD**

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**Introduction** Osteoprotegerin (OPG) is a member of the tumor necrosis factor (TNF) receptor super-family and is a cytokine receptor. OPG has been identified as an osteoclastogenesis inhibitory factor, but its role in the intestinal epithelial inflammatory response is not clear. The primary aim of the current study was to delineate the effects of OPG upon epithelial barrier function as well as epithelial responses with contrast to TNF-α. A further aim was to determine whether OPG is capable of activating the nuclear factor (NF)-κB signaling pathway.

**Methods** Caco-2 and HT-29 cells were grown in vitro to confluence on permeable support membranes and then co-cultured with either TNF-α or OPG for 6 and 9 hours respectively. Following exposure to TNF-α or OPG, interleukin (IL)-8 protein and gene levels were measured. Ussing chamber, western blotting, quantitative PCR and immunofluorescence were employed to further elucidate the impact of OPG on intestinal barrier integrity and function.

**Results** Similar to TNF-α, treatment of epithelial monolayers with OPG resulted in increased monolayer permeability ($P<0.05$), diminished tight junction function and integrity along with loss of tight junction proteins from cell membranes. This was accompanied by elevated IL-8 protein and gene expression ($P<0.05$). Western blotting also revealed that OPG, like TNF-α, induced NF-κB activation as indicated by Iκκ-α phosphorylation.

**Conclusion** The current results indicate that OPG possesses pro-inflammatory properties as it induces gut barrier dysfunction and secretion of pro-inflammatory cytokines. Moreover, these results provide initial evidence that OPG is likely to exert its pro-inflammatory effects through NF-κB activation.
The Descriptive Epidemiology of Inflammatory Bowel Disease in Nelson, New Zealand

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Introduction There is limited descriptive population-based epidemiological research on Inflammatory Bowel Disease (IBD) in NZ. This study aimed to determine the descriptive epidemiology of IBD in Nelson, NZ.

Methods All IBD patients were recruited prospectively between January 1, 2001 and January 1, 2013. Patient information was entered onto an IBD database. IBD prevalence (January 1, 2013), annual incidence rates for (2001-2012), and age at diagnosis were determined. Nelson City and Tasman Region areas were defined using the territorial local authorities.

Results The IBD, Crohn’s disease (CD) and ulcerative colitis (UC) prevalence rates (per 100,000) in 2012 in Nelson were 451.6, 245.3 and 206.3, respectively. Age-standardised prevalence (per 100,000) for IBD was 389.3 (standardised using the World Health Organisation standard population). The crude incidence rate for IBD (per 100,000) was 11.7 in 2001, compared with 18.9 in 2012. CD incidence (per 100,000) increased exponentially from 4.7 in 2001 to 18.3 in 2010. UC incidence (per 100,000) remained stable at 7.0 in 2001 and 5.26 in 2012. The peak age of diagnosis was 20 years for CD and 25 years for UC. The median ages of diagnosis for males and females were 30 and 31 for CD, and 37 and 39 for UC.

Conclusion This is the first prospective longitudinal IBD epidemiology study in the southern hemisphere. IBD is at least as common in Nelson as in Canterbury, NZ. CD showed an exponential increase in incidence with peak rates being higher than Canterbury (2006) and comparable to that found in Geelong, Australia.

A reduction in FODMAP intake correlates strongly with a reduction in IBS symptoms – The FIBS study

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Background IBS affects 7-10% of the population. There is evidence that a diet low in fermentable oligo-, di-, monosaccharides and polyols (FODMAP) is beneficial. This RCT studied the effect of low FODMAPs on symptoms and Quality of Life (QoL).

Methods Participants with IBS (Rome III) were randomised into a low FODMAP (FODMAP) or a waiting list control group (control). They completed the IBS SS (IBS symptom severity scoring system, 0-500 increasing with severity), IBS QoL
questionnaire (0-100 increasing with improved QoL) and a FODMAP specific food frequency questionnaire at baseline, three and six months.

**Results** Both groups (FODMAP, n=23 and control, n=27) were similar at baseline. At 3 months there was a significant reduction in IBS SS in the FODMAP vs control group (275.6±63.6 to 128.8±82.5 vs 246.8±71.1 to 203.6±70.1; p<0.0002) correlating strongly with the reduction of FODMAPs consumed (p=0.02). The QoL improved significantly in the FODMAP (68.5±18.0 to 83±13.4) vs control group (72.9±12.8 to 73.3±14.4; p<0.0001) and there was a reduction in the FODMAP vs control group in the frequency (5.6 days to 2.2 out of 10 vs 3.8 to 3.6 days out of 10; p<0.0001) and severity of pain (44.6±16.9 to 22.3±20.4 vs 40.1±20.4 to 31.8 ±23.7; NS) at 3 months. The reduction in IBS SS and improvement in IBS QoL was sustained at 6 months in the FODMAP group.

**Conclusion** This study showed a reduction in dietary FODMAPs correlates with symptom improvement and improved quality of life in participants with IBS while being nutritionally adequate.

**Acknowledgement** This study was supported by Dieticians NZ, Southern District Health Board and the GutHealthNetwork, a Research Theme of the University of Otago

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**Malnutrition Screening in Hospitalised Patients; Laboratory test (Prealbumin) versus Routine Clinical Assessment.**

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**Background** Disease-related malnutrition (DRM) occurs in 30% of Australian and New Zealand Hospitals. Nutritional support for those at risk of DRM improves clinical outcomes and shortens hospital stay. In Waitemata DHB nutrition assessment utilises the Malnutrition Universal Screening Tool (MUST) but in 2009 only 8% of patients at North Shore Hospital (NSH) were screened with MUST. Universal screening at hospital admission with Prealbumin (PAB) has been proposed as a more effective method of identifying patients at risk of DRM.

**Aim** To evaluate whether universal PAB screening increases patient referral to dietitians for comprehensive DRM assessment.

**Methods** Population: consecutive patients admitted to two surgical, one orthopaedic and two medical acute wards.

**End point** patients referred to dietitian for DRM assessment.

Phase I: routine clinical care, with MUST screening

Phase II: routine clinical care + access to PAB result within 32 hours of admission.
Results
In phase II 27% patients tested had low PAB indicating DRM risk. 30% of referrals to dietitian had low PAB. Only 46% of referrals had MUST screening.

<table>
<thead>
<tr>
<th>No. of days</th>
<th>Admissions subject to screening method</th>
<th>Referrals to dietitians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>25</td>
<td>970 (50.4% male)</td>
</tr>
<tr>
<td>Phase II</td>
<td>22</td>
<td>564 (51% male)</td>
</tr>
</tbody>
</table>

Conclusion
- DRM risk is poorly recognized by clinicians.
- PAB screening did not improve recognition.
- The NSH population at DRM risk is similar to the published literature.
- Universal PAB screening might result in improved rates of DRM detection if abnormal levels automatically triggered dietitian assessment. [245]

mir-1247 is Down-Regulated in CpG island Methylator Phenotype Colorectal Cancers
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Aim microRNAs (miRNAs) are post-transcriptional regulators that can function as tumor suppressor genes. Down-regulation of known tumor suppressor genes in human cancers is closely linked to CpG island hypermethylation (CIMP+) and is now recognized as an important mechanism in the role of carcinogenesis. Mir-1247 was differentially hypermethylated in CIMP+ group in a previously performed global miRNAs methylation study. Here, we explore the possible role of mir-1247 as a tumor suppressive miRNA in colorectal cancers.

Methods RNA was isolated from 20 CIMP+ and 20 CIMP- fresh frozen tissues and 2 CIMP+ and 2 CIMP- cell lines. Expression of mir-1247 was evaluated by real time quantitative-PCR. Cell lines were treated with 5-aza-2'-deoxycytidine for 3 days and post treatment methylation status and mir1247 expression were determined by Methylation Specific PCR (MSP) and qPCR, respectively. Cells were transiently transfected with mir1247 for 48hours and cell growth, rate of apoptosis and migration were compared to controls.

Results A lower level of mir-1247 expression was noted in CIMP+ group when compared to CIMP- group (p<0.05). Similar results were seen in the representative cell lines (p<0.05). De-methylation treatment of AZA confirmed by MSP
demonstrated an increase in mir1247 expression at 96 hour for CIMP+ cell lines. Furthermore, functionally miR1247 transfected cell had increased apoptosis and decreased cell growth and migratory effect in when compared to mock transfected cell lines.

**Conclusions** Methylation suppresses the expression of miR-1247 which offers a potential explanation for the development of methylator phenotype colorectal cancers by acting as tumor suppressor.

**T cell distribution in gastrointestinal inflammatory disorders**

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**Background/Aims** Inflammatory Bowel Disease (IBD) and Spondyloarthropathy (SpA) have epidemiological, symptomatic and genetic overlap. Many people with IBD develop SpA and vice versa. This genetic and symptomatic crossover suggests a role for the immune system in linking these diseases. Our aim was to analyse intestinal T cell distribution and investigate the pathophysiological crossover of intestinal inflammation between people with IBD and SpA.

**Methods** Intestinal tissue biopsies were collected from healthy or diseased people from intestinal locations, dissociated, incubated with specific antibodies and analysed using flow cytometry.

**Results** Analysis of six intestinal regions of healthy individuals revealed increased T cell frequency in the terminal ileum (TI) compared to the colon (24.9 ± 3.4% and 9.2 ± 2.1%, respectively, mean ± SEM, n=5, \( P<0.001 \), One-way-ANOVA with Tukey’s posthoc test). Further analysis of TI tissue from people with IBD revealed increased inflammatory (IL-17⁺) (IBD, 1.1 ± 0.4%; control, 0.23 ± 0.04%, n=3, \( P<0.05 \), unpaired Student’s t-test) and CD8⁺ regulatory (FoxP3⁺CD25Hi) T cells (IBD, 0.95 ± 0.20%; control, 0.16 ± 0.06%, n=3, \( P<0.01 \)).

**Conclusions** These methods are effective for T cell characterisation within healthy and inflamed intestinal tissue. Increased T cells were present in the healthy TI compared to the colon, which is the most common site of IBD and SpA inflammatory lesions. Inflammatory and regulatory T cells were increased in inflamed tissue compared to healthy, suggesting a role for immune dysregulation in disease progression. Further study will analyse SpA patients to complete study of the pathophysiological crossover between IBD and SpA.
Use of Fibroscan in the assessment of chronic hepatitis B infection

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Background Fibroscan technology has been widely available since 2009 and allows non-invasive staging of liver fibrosis. It is validated in Caucasian and Asian populations but not yet in Pacific Island populations.

Aim To describe the use of Fibroscan in an unselected cohort of chronic hepatitis B(CHB) patients identified in the 1984 Kawerau study in New Zealand.

Methods In 1984, a community seroprevalence study in Kawerau identified 572 chronic HBV carriers. Surviving carriers are followed up in 2012 (28 years later) with blood tests and Fibroscan (portable scan with M-probe). Anthropometric measurements were performed on the day of Fibroscan. Unreliable Fibroscan was defined as <10 valid readings, IQR>30% of median or success rate<60%. Liver stiffness measurement (LSM) failure was defined as no valid readings obtained.

Results As of 2012, 63/572 (11%) have died. 343/509 surviving individuals have had Fibroscan (67%). Median age was 44 years. 60% were males, 79% were Maori, 21% European. Median BMI was 30.4kg/m² (range 18.1-56.5). 39/343 (11%) had LSM failure. A further 39 (11%) had unreliable LSM readings. Patients with unsuccessful scans had higher BMI: median 37kg/m² vs 29, (p<0.0001), and higher waist circumference: 107.5cm vs 94cm (p<0.0001). A reliable LSM reading was achieved in 70% of patients who had a repeat Fibroscan with XL probe. LSM readings were observed to increase with BMI: 7% with BMI<30 have LSM>8kPa vs 34% with BMI>30, (p<0.0001).

Conclusions In an unselected cohort with CHB in NZ, Fibroscan was unsuccessful in 22% using the M-probe. Using the XL probe improved overall reliable LSM to 94%. Obesity was a predictor of unsuccessful Fibroscans and resulted in over-estimation of liver fibrosis.

Retrospective comparison of Radiofrequency and Microwave ablation for Hepatocellular Carcinoma

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Background Radiofrequency thermal ablation is an effective treatment for small(<3cm) hepatocellular carcinoma (HCC) in patients with compensated liver disease not amenable to resection or transplantation. Microwave ablation (MWA) is
felt to have advantages over RFA, including higher intra-tumoural temperatures, larger ablation fields, with less heat sink effect and shortened ablation times.

**Methods** In 2011, our Hepatoma Service introduced MWA as the preferred localized ablative therapy for HCC via percutaneous, laparoscopic and open surgical approach. This retrospective audit compared baseline characteristics, technical aspects and complications for patients treated with MWA or RFA between May 2009 and December 2012. Radiological response, tumour recurrence, and survival were also evaluated.

**Results** 61 compensated cirrhotic patients, with median MELD of 7, underwent ablation MWA (n=35) or RFA (n=26). Common aetiologies were HCV (57%:35%), HBV (23%:54%) and alcohol (11%:8%). Procedures were performed percutaneously (n=28:17), laparoscopically (n=4:8), and at laparotomy (n=3:1). Median tumour size was 2.5 cm (MWA), and 2.1 cm (RFA) (p=0.06). Median ablation time was 4 minutes (MWA) versus 19 minutes (RFA). No major complications were seen in the RFA group. In the MWA group, one patient decompensated, two developed pneumothorax, and two developed portal vein thrombosis on follow-up imaging.

At 6-month follow-up, 14/25 (55%) of RFA patients were 'disease-free' compared to 15/23 (65%) MWA (p=0.52). 11/25 (44%) of RFA patients were 'alive-with-disease' compared to 6/23 (26%) MWA. Two MWA patients were 'dead-with-disease' at 6 months.

**Conclusions** Early analysis of our experience suggests RFA and MWA are both effective. However, MWA increases ablation zone, reduces procedure duration and local recurrence, but possibly has higher rates of local complications.

**Tenofovir use in chronic hepatitis B infection women during pregnancy: Auckland Experience**

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**Introduction** Tenofovir (TDF) is funded (i) from early pregnancy to treat active chronic hepatitis B (CHB) (HBV DNA > 4 Log IU/mL and ALT > ULN), and (ii) in third trimester to prevent vertical transmission in immunotolerant CHB (HBV DNA > 7 log IU/mL and persistently normal ALT).

**Method** Retrospective audit reporting experience of tenofovir use during pregnancy and post-partum follow-up of mothers and babies.

**Results** 66 women received TDF during pregnancy, median age 30 years. 38 were Asian; 24 Pacific Islanders and 4 were Maori.

(i) TDF was started during first trimester (median 10 weeks) in 17 women with active CHB, of whom 12 were switched from entecavir or lamivudine (median viral load <1.2 log IU/mL) and 5 were started de novo for pregnancy-related hepatitis flare.
(median 7.5 log). 5 were HBeAg-positive, of whom one achieved seroconversion. All women were switched to entecavir after breastfeeding.

(ii) TDF was started during third trimester (median 32 weeks) in 49 women to prevent vertical transmission. All were HBeAg-positive with baseline HBV DNA >7 log IU/mL which dropped to median 4.5 log at delivery. TDF was discontinued 8 weeks post-partum. 2 patients developed post-partum ALT flare (>3 xULN). Follow-up HBV serology in 15 babies confirmed protective hepatitis B immunity.

**Conclusion** TDF is safe and effective therapy for both active CHB and for prevention of vertical transmission of HBV. When TDF is administered to prevent vertical transmission, postpartum follow-up should include close monitoring of mothers for post-TDF flares and testing of neonates to confirm immunity.

15 Years of Liver Transplant Assessments for Chronic Liver Disease: A Single Centre Experience

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**Background** Liver transplant (LT) remains the best treatment for decompensated liver disease and hepatocellular carcinoma (HCC). Due to organ shortage, LT assessment is vital to provide the best utility for the available organs.

**Aims and Methods** Patients with chronic liver disease assessed for LT were retrospectively evaluated with respect to their outcome and predictors of survival. Subgroup analysis was performed to analyse changes in LT assessment over three 5-year intervals.

**Results** Six hundred and twenty six patients with a median age of 54 years (range 16-71), underwent LT assessment from December 1997 to December 2012. The etiology of liver disease was HCV in 206 (32.9%), HBV in 132 (21.1%), ALD in 72 (11.5%), NASH in 46 (7.3%) and ‘Other diagnosis’ in 170 (27.2%) patients. Four hundred and eleven (65.7%) were listed for LT at their initial assessment. Overall survival was significantly better for patients listed compared with those not listed (75.0% vs 45.0%, p<0.0001, OR 3.27).

Subgroup analysis of patients without HCC, show patients with HBV have a significantly better survival than ALD and NASH (79.5% vs 51.8% vs 53.7 respectively, p<0.001). Patients with NASH were more likely to be diagnosed with coronary artery disease (22% vs 2.3% HBV, p<0.001), and patients with ALD were less likely to be listed due to psychosocial contraindications.

Indication for LT over different eras shows that the incidence of NASH and HCC assessments has doubled. In contrast patients assessed for decompensated HBV have significantly decreased.

**Conclusions** Patients with chronic HBV assessed for LT have the best survival with ALD and NASH the worst outcomes on an intention to treat basis. NASH and HCC are becoming an increasingly more prevalent indication for LT assessment.
The prevalence of abnormal liver enzymes in New Zealand: findings from the 2008/09 Adult Nutrition Survey

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Aim To describe the prevalence of liver damage, as defined by abnormal liver enzymes, among the New Zealand adult population, and high risk subgroups using data from the 2008/09 Adult Nutrition Survey (2008/09 ANS).

Methods The 2008/09 NZANS was a nationally representative, cross-sectional survey of 4,721 New Zealanders aged 15 years and above. A non-fasting blood sample was obtained from 3,348 non-pregnant participants. Liver function (ALT, AST, GGT) was measured using 3,035 remaining blood samples. ALT elevation and GGT elevation were used to estimate liver (hepatocyte) damage. Elevated levels were defined as ALT >29 IU/L and GGT >71 U/L for men, and ALT >22 IU/L and GGT >42 U/L for women. Data were weighted, and means and proportions calculated.

Results The prevalence of elevated ALT was 13.1% (95% CI: 11.3, 15.2), and the prevalence of elevated GGT was 7.8% (95% CI: 6.6, 9.2). The prevalence of elevated ALT rates was 16.9% (95% CI: 14.0, 20.3) among men and 9.7% (95% CI: 7.9, 11.8) among women. High rates of elevated ALT were observed among Māori (18.0%) and Pacific (18.6%) compared with New Zealand European/Others (12.2%). Similarly, high rates of elevated GGT were observed among Māori (13.2%) and Pacific (17.1%) compared with New Zealand European/Others (6.6%). Elevated ALT and elevated GGT rates were higher among obese individuals, 22.0% and 13.1%, respectively, than those for normal weight individuals, 6.2% and 3.8%, respectively.

Conclusion The prevalence of abnormal liver enzymes is high in the New Zealand population, particularly among Māori, Pacific and obese individuals.

Biliary dilatation induced by different opiate drugs – a case series

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Introduction Biliary dilatation has previously been associated with chronic methadone use as well as recreational opium use, presumably because of the tonic effects of opiates on the sphincter of Oddi. Discussion with colleagues around New Zealand revealed that this association is not widely appreciated. There is no literature on whether biliary dilatation is also related to the chronic use of other opiate drugs, such as morphine and oxycodone.
Methods Over several years we accumulated, investigated and followed a small series of patients with biliary dilatation associated with chronic opiate use. Subjects were identified from gastroenterology outpatient clinics. They were found to have biliary dilatation on ultrasound, for which no reason was apparent. Other investigations were completed.

Results Six subjects with biliary dilatation associated with chronic opiate use were identified. Four were associated with methadone, 1 with morphine, and 1 with oxycodone. All subjects were asymptomatic and had normal alkaline phosphatase and bilirubin levels. In 4 subjects, there was both intrahepatic and extrahepatic duct dilatation. In 5 subjects, either further investigations found no other cause for biliary dilatation, or serial ultrasounds were unchanged over several years, confirming the benign nature of the condition.

Conclusion The association of methadone, morphine and oxycodone with biliary dilatation suggests a probable opiate class effect. This is probably due to the tonic effect of opiates on the sphincter of Oddi. A larger series is needed to confirm the association. Of note all patients had a normal bilirubin and alkaline phosphatase, and no patients had abdominal pain.