diabetes and beliefs about the seriousness of diabetes, were predictive of better dietary self-care \( (F=9.2; R^2=0.31; p<0.0001) \). In conclusion, support from friends and family are important to adolescents as they live with their diabetes. Personal models of diabetes are important determinants of both dietary self-care and well-being. The implications for interventions to enhance adolescents' self-management of diabetes are discussed.

P121. Does diabetes impair quality of life?
Wallymahmed M.E., MacFarlane I.A. Diabetes Centre, Walton Hospital, Liverpool.
Diabetes mellitus is a condition which often leads to substantial lifestyle adjustments. Patients may have to cope with complicated treatment regimens, the burden of symptoms and complications and also uncertainty about the future. All of these may potentially lead to serious impairment of quality of life (QoL). Few studies, however, have compared QoL in people with diabetes with age and sex matched healthy controls from the same community. The aim of the study was to assess QoL in people with diabetes and compare scores with a group of healthy controls. We studied 57 people with diabetes attending routine diabetic clinics (23 male, mean age 36 years, mean duration of diabetes 6.9 years, mean haemoglobin A1c 8.2%, 31 insulin treated) and 57 age and sex matched controls. QoL was assessed using the following self-rated scales: Life Fulfillment, Self Esteem, Hospital Anxiety and Depression and Mental Fatigue. There were no significant differences between these groups in any of the domains assessed. In conclusion, in this study people with diabetes attending a diabetes centre did not report any impairment in QoL when compared with healthy controls.

P122. A qualitative investigation to inform the design of quality of life measures for children with diabetes.
Wilson R.J.a, Christie M.J.b, Bradley C.a Department of Psychology, Royal Holloway, University of London, London, and bDepartment of Psychology, University of York, York.
Although there are well-researched quality of life measures for adults there are no individualized diabetes-specific instruments for young children which measure the impact of diabetes on the individual child's quality of life. Qualitative research was carried out with the aim of designing three quality of life measures for children with diabetes aged 5–8, 9–12 and 13–16 years. Seventy children with diabetes attending one of four hospital clinics took part in semi-structured interviews and discussion groups. The data were analysed with a form of content analysis and used to identify important quality of life issues to be covered. Item format was also discussed with the children individually and in groups. Clinic observations, a literature review and consultations with health professionals were used to supplement the children's views and ensure the face and content validity of the new instruments. Qualitative findings guiding content are presented together with the newly designed instruments. Large-scale data collection is now required for psychometric evaluation of the new individualized quality of life measures for children with diabetes. Note
that statistical analysis was not appropriate for this qualitative
research as the data were gathered using open-ended
questions during semi-structured interviews and discussion
groups. The raw data consisted of children's verbal reports,
and were analysed using a form of content analysis, where
the material for each child was initial (considered separately),
and the emerging quality of life themes grouped together to inform
the design of the new measures.

P123. Injection related anxiety in insulin
treated diabetes.
Zambanini A., Maisey M., Feher M.D. Section of
Clinical Pharmacology, Imperial College School of
Medicine, Chelsea and Westminster Hospital, London.
As the use of insulin in diabetes increases, the presence of
injection related anxiety and phobia may influence compli-
ance, glycemic control and quality of life. Few studies have
assessed the extent of this problem. Unselected patients
(n=115; 80 Type 1, 35 Type 2) attending for routine follow-
up completed a detailed questionnaire assessing anxiety and
phobia symptoms. An injection anxiety score (IAS) was
derived from the DSM IV diagnostic criteria for 300.29
specific phobia. A general anxiety score (GAS) was obtained
from the anxiety component of the Hospital Anxiety and
Depression Scale. Injections had been avoided in 14% of
cases and 42% would be bothered by having to inject more
frequently. An IAS≥3 was seen in 28% of cases and of these
66% injected insulin twice a day, 45% had avoided
injections, and 70% reported concern should they have to
inject more frequently. The median GAS in the IAS≥3 was 7
compared with the IAS<3 where the median GAS was 3
(p<0.0001). The mean haemoglobin A1c (±SD) was 9.4% (1.9%)
in the IAS≥3 compared with 8.9% (1.7%) in the
IAS<3 (not significant). Symptoms related to insulin injection
anxiety and phobia have a high prevalence in an unselected
population of insulin treated diabetic patients.

P124. Serum 1,5-anhydro-D-glucitol is not
an adequate marker of glycaemic control in
Type 1 diabetic patients with nephropathy.
Chusney G.D. a, Viberti G.C. b, Pickup J.C. b aDepartment
of Chemical Pathology and b Department of
Endocrinology, Diabetes and Metabolic Medicine,
United Medical and Dental Schools, Guy’s Hospital,
London.
1,5-Anhydro-D-glucitol (AG) is a proposed marker of
glycaemic control in diabetes. Serum AG concentrations are
lower in diabetes as a consequence of competition with
fructose for reabsorption at the renal tubules. We therefore
investigated the effect of various degrees of nephropathy on
serum AG in Type 1 diabetes. Serum AG was measured in 19
patients with normal albuminuria (NA) (13M/6F, albumin
excretion rate (AER) 10.2 µg min⁻¹ [median], 21 with micro-
albuminuria (MA) (18M/3F, AER 50.2 µg min⁻¹) and 29 with
clinical proteinuria (CP) (15M/14F, AER 589 µg min⁻¹),
matched for glycaemic control (haemoglobin A1c, (HbA1c)
mean±SD) 9.4±1.2, 9.1±1.1 and 9.6±1.4). AG was not
significantly different in MA vs NA (7.0, 1.8-28.8 [median,
rangle] vs 9.4, 1.1-36.4 µmol⁻¹ but was higher in CP vs NA

and MA (13.7, 0.5-72.6 µmol⁻¹, p=0.002 and >0.01
respectively). AG correlated with HbA1c in NA (p<0.01,
r=-0.60, but not in MA or CP. In CP, 1creatinine correlated
with AG (r=-0.55, p>0.01); no relationship was found in
NA or MA. In conclusion, serum AG is a poor measure of control
in Type 1 diabetic patients with nephropathy and is increased,
relative to HbA1c, in Type 1 diabetic patients with clinical
proteinuria, probably as a consequence of reduced glomerular
filtration rate.

P125. High concentrations of lipoprotein (a)
are associated with urinary protein excretion
in patients with diabetes and vascular disease.
Feher M.D. a, Zambanini A. a, Cox A. b, Foxton J. a,
Wierzbicki A.S. b aSection of Clinical Pharmacology,
Imperial College School of Medicine, Chelsea and
Westminster Hospital, London, and bDepartment of
Chemical Pathology, Guy’s & St Thomas’ Hospital Trust,
St Thomas’ Hospital, London.
Mechanisms linking the association of proteinuria and
cardiovascular disease (CVD) in diabetes, are at present
unclear. Lp(a) is a recognized atherogenic and thrombotic
factor which at a concentration of 300 mg/l or more, is
associated with clinical CVD. Few studies have assessed the
relationship between Lp(a) and proteinuria in diabetic patients
with and without CVD. We performed a cross-sectional study of
287 stable diabetic patients, measuring serum Lp(a)
concentration and assessing for proteinuria by both protein
dipstick test and a single urine albumin to creatinine ratio.
Clinical CVD was defined as the presence of ischaemic heart
disease, cerebrovascular disease or peripheral vascular
disease. The group comprised 175 men, 112 women, age
range 22 to 96 years, duration of diabetes 1 to 61 years,
inulin treatment recorded in 26%. For the total group, there
was no increased frequency of Lp(a)>300 mg/l with
increasing proteinuria (28% with no microalbuminuria, 26% with
microalbuminuria, and 30% with proteinuria). However,
in the group with CVD the prevalence of Lp(a)>300 mg/l
was 10% with no microalbuminuria, 37% with microalbumin-
uria *, and 53% with proteinuria * (p<0.05). Increased urinary
protein excretion and Lp(a)>300 mg/l are associated with
CVD. This may be another mechanism explaining the excess of
cardiovascular events in this population.

P126. Measurement of TIMP-1 in the serum of
Type 1 diabetic patients.
Gordon D. a, Timms P. b, Maxwell P. P. Departments of
a Medicine and b Clinical Biochemistry, Stobhill NHS
Trust, Glasgow.
It is well established that type IV collagen is increased in the
thickened basement membranes of capillaries in diabetic
patients. The amount of collagen in the extracellular matrix is
influenced by both the rate of its production and degradation.
The matrix metalloproteinases are primarily responsible for
extracellular matrix breakdown. Matrix metalloproteinase
activity is influenced by the presence of tissue inhibitors of
metalloproteinases (TIMPs). Our aim was to investigate the
plasma levels of TIMP-1 in 24 patients with Type 1 diabetes.

POSTERS