



Tayside  
Diabetes  
MCN



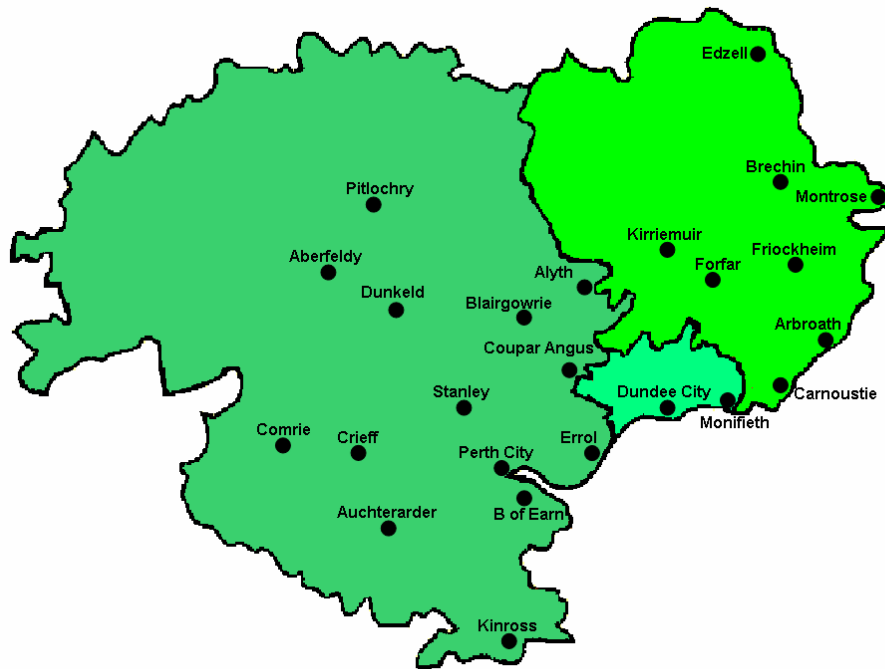
# Improving treatment and care for people with diabetes in Tayside

*The Annual Report of NHS Tayside  
Diabetes Managed Clinical Network*

**2008/09**

[www.diabetes-healthnet.ac.uk](http://www.diabetes-healthnet.ac.uk)

The Tayside Diabetes Managed Clinical Network (MCN) brings patients and patient representatives together with healthcare professionals from primary and secondary care to agree the best way to care for people with diabetes. The aim is that every patient receives the same high quality care wherever they may live.



## Contents

## Page

Summary	1
Making Strategy a Reality	2
Involving Patients	3
Supporting Self Care	3
Podiatry	6
Dietetics	6
Retinopathy Screening	7
Primary Care	7
Children and Young Adults	8
Intensification of Insulin	8
Education	9
Ethnic Minority and Disadvantaged Groups	9
NHS QIS Follow-up Review	9
Research	13
Future Priorities	14
Clinical Outcomes	15
Network Contacts	27

# Summary

Welcome to the 8th Tayside Diabetes Managed Clinical Network (MCN) Annual Report. The aim of this report is to provide a comprehensive overview of the activities of the MCN during 2008/09.

As at 31 March 2009 there were 17,404 people living with diabetes in Tayside, a prevalence of 4.4%. This is a 7% increase over the previous year. This increasing trend reflects what is happening national and internationally.

The Diabetes MCN continues to provide an established model to facilitate collaborative working and patient involvement in order to achieve improvements in care for people with diabetes. Some of these key achievements are:

- Very high numbers of people with diabetes receiving regular checks and achieving treatment goals despite the increasing number of people with diabetes.
- Implementation and ongoing monitoring of a Local Enhanced Service for Diabetes as part of the Scottish Enhanced Services Programme. This ensures that patients newly diagnosed with Type 2 diabetes are managed in line with the Tayside Integrated Care Pathway for Diabetes.
- Second patient and carer event held in April 2007 giving people the opportunity to learn more about their diabetes and how to look after themselves.

- Continued development of educational initiatives for patients through Tayside Diabetes Education Programme and Insulin Management Programme, working towards meeting the NICE Education Criteria for structured education.
- Continued provision of educational opportunities to promote skills and competencies for healthcare professionals including University of Dundee certificate level course in diabetes care and a range of education evening meetings in each locality throughout the year.

**Dr Alistair Emslie-Smith**  
**Lead Clinician, Tayside Diabetes Managed Clinical Network**

**Elaine Wilson**  
**Manager, Tayside Diabetes Managed Clinical Network**

# Making Strategy a Reality

The focus of the MCN's work continues to be to deliver the promises set out in the Diabetes Collaborative Commissioning Plan:

1. All people newly diagnosed with Type 2 diabetes will have access to quality assured, structured education through the Tayside Diabetes Education Programme (TDEP) within one month of diagnosis.
2. At least 75% of people with diabetes will have a foot risk score formally calculated annually.
3. All people with diabetes will have access to appropriate state registered podiatry services as indicated by their foot risk.
4. All people with diabetes will have appropriate access to Health Profession Council (HPC) registered dietetic services in line with agreed Tayside-wide standards.
5. All people with diabetes will be managed in line with agreed "Tayside Care Pathway for Patients with Diabetes".
6. All appropriate people with Type 1 diabetes will have access to intensive management instruction via the Tayside Insulin Management Programme (TIM) where appropriate.
7. All people with diabetes will be offered annual eye screening by digital retinal photography.

Work undertaken to deliver these promises and progress against

each of these is contained throughout the various sections of this report.

The delivery of many of these promises contributes to NHS Tayside's wider Long Term Conditions Collaborative Commissioning Plan including:

- developing relevant education to support people to manage their long term condition
- shifting the balance of care to ensure that care is provided by the most appropriate person, service and place to suit people's needs.

# Involving Patients

2008/09 was a very active year for the Diabetes MCN Patient Council whose numbers were further enhanced by another additional member in September 2008.

Following a successful patient and carer event in April 2008 the Patient Council have spent considered time and efforts planning the next event in May 2009. The Council have taken a much more active role in the planning and delivery of the event, demonstrating their desire and ability to lead on developments for the MCN.

The Patient Council asked people with diabetes to share their experience of living with diabetes or the care that they receive. Responses were received from 18 people with diabetes and covered a range of aspects including the emotions of being diagnosed, practical challenges of following healthy lifestyle choices but also acknowledging the excellent diabetes care they receive from their health care teams. One of the common themes was the challenge of maintaining a healthy diet and understanding what you can and can't eat. Given the majority of people diagnosed with Type 2 diabetes will not routinely see a dietitian the Patient Council wanted to ensure that the written information available was as clear and helpful as possible. As a result of this the Patient Council has worked with the Diabetes Dietitians to review, update and improve the Patient Information leaflet on healthy eating.

Members of the Patient Council continue to provide valuable input to the Diabetes MCN Network Board and Implementation Group. Members were also invited to NHS Tayside Lay Representative Reception in November where the Chairman of Mr Sandy Watson, thanked patients and carers for taking the time

to get involved in health services in Tayside.

## Supporting Self Care

In Tayside we have continued to develop and provide a range of initiatives to provide people with diabetes with the knowledge and skills they need to manage their condition effectively.

### **Semi-Automated Patient Held Summary**

This summary contains key information on blood-pressure control, medication information and summaries of goals agreed during a consultation. The summary can be printed out by the healthcare professional and given to the patient to take away with them.

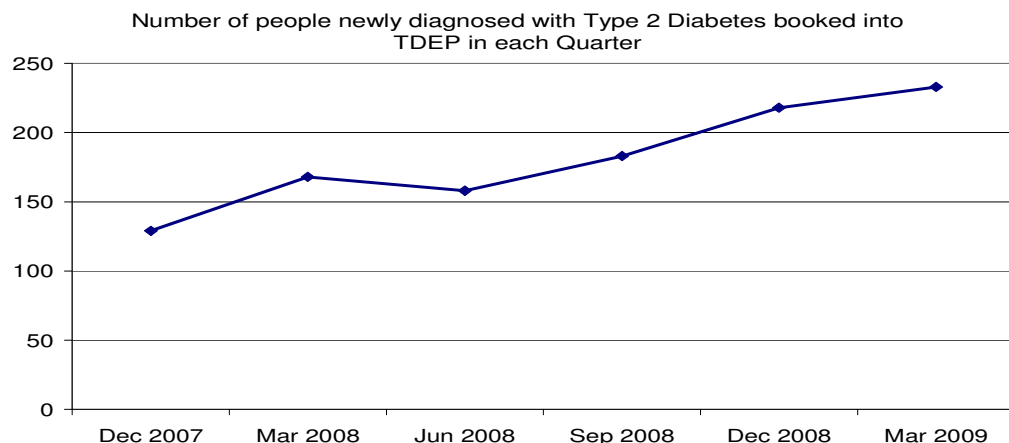
Efforts continued to ensure that as many people as possible know about the summary and can have access to it. The MCN has promoted the patient held summary at professional and patient events. The summary has been used for 187 people with diabetes; 34 with Type 1 diabetes and 153 with Type 2 diabetes.

Further work is continuing to allow access to this information on an electronic basis in a user friendly format.

## Tayside Diabetes Education Programme (TDEP)

The Tayside Diabetes Education Programme (TDEP), which provides structured group education for people who are newly diagnosed with Type 2 diabetes and their carers, has successfully continued in many areas across Tayside.

In the short term resource has been agreed until March 2010 as part of the Local Enhanced Service funding to enhance delivery of TDEP. A diabetes patient educator took up post in October 2008 to provide sessions in Dundee and Perth & Kinross. In Angus the funding has been used to support practice and community staff to deliver the sessions. During 2008/09 additional sessions were commenced in Angus and Perth & Kinross with the number of groups held each month increasing from 8 in 2007/08 to 10 in 2008/09. The number of people who accessed TDEP in 2008/09 increased, as shown in the graph below.



Work is ongoing as part of the Diabetes Collaborative Commissioning Promises to explore long term resourcing of the programme.

## Tayside Insulin Management Programme (TIM)

The Tayside Insulin Management Programme is a high quality person centred structured education programme in intensive insulin therapy and self management where people with Type 1 diabetes learn how to match their insulin dose to their chosen food intake on a meal by meal basis.

The number of programmes run and people attending increased in 2008-09.

	No of sessions	No of people
2007-08	9	63
2008-09	11	76

All attendees reported that they found the course Excellent or Good.

97% said the pace of the course was just right.

98% said the length of the sessions were just right.

99% found the topics covered within the sessions Useful or Very Useful

91% reported that the sessions had met their expectations.

Initial analysis of the Quality of Life questionnaires shows an improvement in patients' perceptions of the negative effects diabetes has on aspects of their life particularly in the areas of Physical Ability, holidays, travelling, worries about the future and

freedom to eat as one wish.

Work is ongoing for both the TDEP and TIM Programme to aim to meet the National Institute for Clinical Effectiveness (NICE) key criteria for structured education programmes of Philosophy, Structured Curriculum, Trained Educators, Quality Assurance and Audit. Standardised curriculums and workbooks have been developed to support both these programmes.

### **Patient and Carer Event**

The second diabetes education event for people with diabetes and carers across Tayside was held in April 2008 in Ninewells Hospital, Dundee. Around 120 people attended and heard from local healthcare professionals about a range of issues. It was also an opportunity to meet and chat with other people with diabetes and carers.

There was extremely positive feedback from the conference with many welcoming the opportunity to interact with other patients and carers and share ideas. Many of the delegates also commented on the quality of the presentations and workshops and this was also demonstrated by the number of questions asked and the difficulty in getting people to leave workshops! The majority of delegates reported that they had learnt something new and would wish to attend future events. The Patient Council are planning the next conference in May 2009.



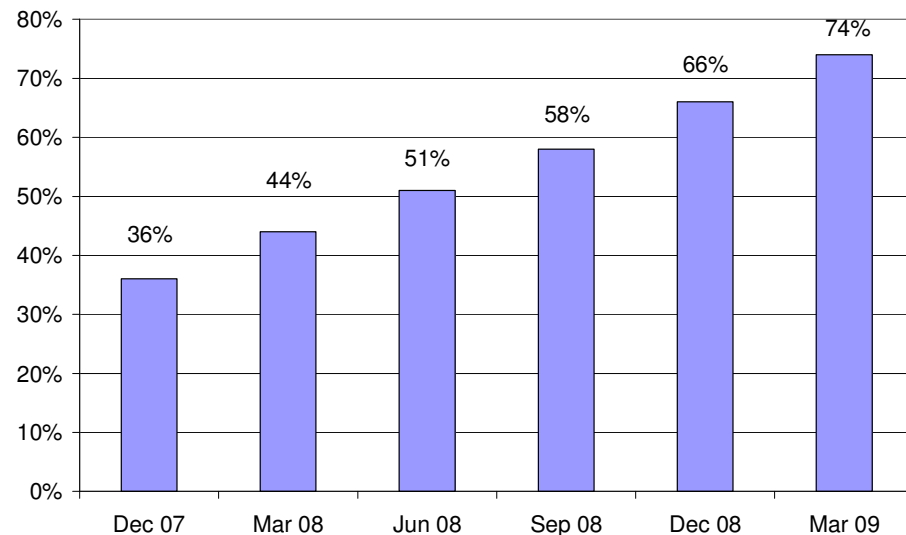
### **Angus Diabetes Day**

Angus Community Health Partnership held a community patient participation event for those affected by diabetes in Forfar in August 2008. Various stands and workshops were available. Feedback comments showed an overwhelming satisfaction that the event had been worthwhile and useful.

# Podiatry

The Local Enhanced Service for Diabetes agreed in Tayside from 1 January 2008 includes the use of the SCI-DC foot risk tool (see page 8). Since the introduction of the Enhanced Service the recording of a foot risk score for people with diabetes has more than doubled.

Percentage of people with diabetes with a foot risk score recorded



A National DVD for healthcare professionals on how to undertake foot assessment and use SCI-DC foot risk tool which was launched in May 2008 was made available on Diabetes MCN website.

The Footstep Education programme was started using funding from the Diabetes Local Enhanced Service. This is a group education programme for suitable people with diabetes with low

foot risk. It aims to educate and empower them to manage their own foot care confidently and competently. The Foot Sub-Group chaired by Brian McMurray continues to meet on a regular basis to provide a forum for discussion and sharing of best practice in relation to Diabetes foot care

# Dietetics

The Diabetes Sub-Group of the Tayside Nutrition and Dietetics Network, chaired by Edith Walters, meets on a regular basis to actively work towards providing a clinically effective and equitable service. The Group developed and consulted on guidelines for appropriate access to dietetic services for people with diabetes. These will be used to benchmark services across Tayside

Equity of access had remained a challenge across Tayside with no dedicated diabetes dietitians in Perth & Kinross. The MCN were delighted that Perth & Kinross agreed in February 2008 to resource a dedicated dietitian for diabetes. This has enabled the service to develop and deliver the important dietetic element of diabetes care to support patient empowerment and self management.

The Dietitians continue to contribute to the delivery of the TDEP and TIM programmes (see page 5).



# Retinopathy Screening

NHS Tayside has in place a comprehensive screening service provided from the static site at Ninewells for those living in Dundee and Broughty Ferry and from 2 mobile vans covering all other areas in Perthshire & Kinross and Angus. A second fixed camera became operational at Perth Royal Infirmary in June 2008.

The eye screening service has been redesigned to reduce the number of drop in slots and utilise more fixed appointments to ensure the most effective use of resources. 85% of all eligible patients had their eyes screened during 2008/09.

The Retinopathy Sub-Group chaired by Dr Graham Leese continues to oversee the development of the Diabetic Retinopathy Screening Programme.



# Primary Care

The MCN aims to ensure that primary care clinicians have access to support to enable them to provide appropriate and quality assured care for people with diabetes.

Figures published for the Quality and Outcomes Framework for 2008-09 showed that GPs in Tayside are reviewing patients and recording their clinical information to a very high standard. Tayside GPs achieved 99.7% of the maximum available points for diabetes against a national average of 99.2%.

In December 2007 a Local Enhanced Service for Diabetes was agreed as part of the Scottish Enhanced Services Programme. The Local Enhanced Service for Diabetes requires participating general practices to provide care for people newly diagnosed with Type 2 diabetes from 1 January 2008.

The Local Enhanced Service supports the implementation of the NHS Tayside Diabetes MCN Integrated Care Pathway for Adults with Diabetes promoting an enhanced, responsive level of support for patients with diabetes within a single system for diabetes care across NHST.

During the 2008-09 of the Local Enhanced Service:

- 1440 people newly diagnosed with Type 2 Diabetes were cared for within general practice
- 37,172 foot risk scores were recorded for people with Type 2 diabetes

## Children and Young Adults

The Tayside Children's Diabetes service continues to work in collaboration with children's diabetes services in Fife and Forth Valley (DiabNet), resulting in adoption of uniform clinical guidelines and service evaluation. The nurses from all 3 Health Board areas continued to staff the emergency telephone help-line for children and their families for use out-of-hours. This continues to be an important source of support for many. As a direct result of this many fewer children are being admitted to the children's ward with the acute complications of diabetes.

The DiabNet dietitians have a leading role in the development of updated and new resources through SNDRi which will be sold nationally. These resources have been peer reviewed and patients in Scotland and England were given the opportunity to give comments.

The clinical services provided by the team have continued to develop and deliver an out-patient based service with the new 'well' child with diabetes being established on insulin treatment at home. In addition the number of clinics held at sites other than Ninewells has increased. The specialist nurses continue to give much advice by phone and the use of mobile phones and email have increased accessibility of the team.

There has been a continued move to using more intensive insulin regimens-including insulin pump therapy with over 80% of patients on intensive insulin therapy. The team have worked with schools to enable the administration of an insulin injection at lunchtime. There is recognition that to get the full benefits of a more intensive programme much more education with respect to insulin adjustment for CHO and blood glucose levels needs to be given. This remains a significant challenge for the service.

## Intensification of Insulin

As at March 2009, 63 people were on insulin pump therapy in Tayside. The usage of insulin pump therapy continues to be monitored on an ongoing basis.

Intensive insulin management education, the Tayside Insulin Management Programme (see page 5) has been rolled out. Patients assessed as suitable for pump therapy must undertake intensive insulin management education before being commenced on pump therapy. A multidisciplinary insulin pump clinic is held at Ninewells for the adult service.

The Children's Diabetes Service has also developed a clinical insulin pump service and now approximately 10% of the children with diabetes in Tayside are on this therapy. This makes us one of the largest paediatric pump centres in the UK.

The local criteria for pump usage were reviewed and updated following the publication of the updated NICE Technology Appraisal in June 2008.

# Education

The MCN aims to make available a range of appropriate and relevant educational opportunities.

## **Dundee Diabetes Course**

A further professional learning module in caring for people with Diabetes was held in 2008/09. The course, delivered jointly by The University of Dundee and Tayside Diabetes MCN, gives healthcare professionals the practical knowledge and skills necessary to provide an effective and efficient service for people with diabetes.

## **Locality Forum Groups**

The forums held in Angus, Dundee and Perth & Kinross continue to provide a varied programme for the multi-professional and inter-agency teams involved with diabetes care across Tayside. Twelve meetings were held during 2008/09 attended by around 308 healthcare professionals. The vast majority of attendees reported that the meetings were of relevance to their educational needs and that the quality of the education was good or excellent.

## **Foot Care**

Training sessions in foot screening were provided across Tayside by the Specialist Diabetes Podiatry team.

## **Ad hoc training**

Diabetes Specialist Nurses and Dietitians have provided education for groups of district nurses, nursing home and social work staff as and when requested. There is also the opportunity for staff to attend out patient clinics or group education sessions.

# Ethnic Minority and Disadvantaged Groups

In order to inform the planning of future services to meet needs, the MCN has been recording the ethnicity of people with diabetes. This information has been collected through the Retinopathy Screening Programme. To date ethnicity information is now available for 64% of people with diabetes.

In March 2009 the MCN submitted a bid to the Health Foundation to address gaps in the diabetes care of residents with diabetes in care homes. Unfortunately the bid was unsuccessful. The MCN continues to explore ways to improve the diabetes care of this group.

# NHS QIS Follow-Up Review

The MCN continues to address through its workplan the NHS QIS Diabetes Standards which were not met, see table on next page.

<b>Criteria</b>	<b>Reason not met</b>	<b>Action</b>
<b>ESSENTIAL</b>		
<b>Standard 1.2 – Organisation: IM&amp;T, Clinical Management Systems, Audit and Monitoring</b>		
Data interfaces are in place between primary and acute care such that a single data entry covers all recording needs.	There is no facility to back-populate data from SCI-DC (the national clinical information system for diabetes) into the primary care systems, resulting in double data entry.	This criterion will not be met until the national SCI-DC system fully interfaces with all other relevant NHS information systems. Outwith NHS Tayside's control.
<b>Standard 4.1 – Clinical Review</b>		
There is a protocol to ensure that all people with diabetes are offered review of the specified indicators on an annual basis, or more frequently where clinically indicated, from diagnosis.	Quality and Outcomes Framework (QOF) data for 2005-06 was used to assess and support the recording of the relevant indicators with 90% being considered an acceptable achievement rate. 85% was achieved for microalbuminuria testing.	This improved to 89% in the latest QOF data published for 2008-09 following the review by NHS QIS.
<b>Standard 7.2 – Clinical Management: Feet</b>		
All people with diabetes have appropriate access to state registered podiatry services.	There is variable access to podiatry services provision across NHS Tayside, across both primary and secondary care as a result of resource constraints.	Patients with high risk feet are targeted through a risk stratification matrix and criteria for access to specialist services. Further work is being undertaken through the Diabetes Collaborative Commissioning Plan looking at where people receive their foot care across community and specialist services, staff competencies and capacity.
<b>Standard 9.3 Clinical Management: Renal</b>		
All people with Type 1 diabetes, with microalbuminuria as defined in a local protocol, are prescribed an ACE inhibitor unless there are contraindications.	Insufficient Evidence. Data taken from SCI-DC was not reliable as does not allow accurate audit of drug usage. QOF data records that 80% of people with microalbuminuria have been prescribed an ACE inhibitor but this does not distinguish between Type 1 and Type 2 diabetes.	Planned developments with SCI-DC should enable this to be audited in future. Further work is being undertaken locally to extrapolate information.

<b>DESIRABLE</b>		
<b>Standard 1.5 Organisation: IM&amp;T, Clinical Management Systems, Audit and Monitoring</b>		
The computerised clinical management system is Board-wide and incorporates call and recall systems for Screening /review of complications.	With the exception of eye screening SCI-DC does not have a call and recall function and there are no plans to develop this functionality. As a consequence, this criterion cannot be 'met'.	Outwith NHS Tayside's control.
<b>Standard 3.5 Patient Focus</b>		
People with diabetes have appropriate access to identified key health professionals including state registered podiatry and dietetic, nursing and psychology services.	<p><u>Dietetics</u> Dietetic services have been redesigned but there remains variable access across NHS Tayside, there is no specialist diabetes dietetic service in Perth &amp; Kinross.</p> <p><u>Psychology</u> There is no dedicated adult diabetes psychology service available. 0.1 WTE is available for the paediatric diabetes service.</p>	<p><u>Dietetics</u> Perth &amp; Kinross Community Health Partnership have approved the post of a Specialist Diabetes Dietitian.</p> <p><u>Psychology</u> NHS Tayside will participate in the training for diabetes staff in behavior change methods and identifying depression and anxiety funded by the Scottish Diabetes Group. Course Planned for May 2009.</p>
<b>Standard 7.4 – Clinical Management: Feet</b>		
All people with diabetic foot ulcers are reviewed by a diabetes foot specialist, using digital camera photographs for comparison.	It is not routine practice to photograph all diabetic foot ulcers. Staff reported a lack of national guidance in relation to use of digital cameras, resolution of photographs, size of image, etc. Issues were noted with the printing of digital photographs, and electronic storage of photographic images.	SCI-DC have developed and are piloting foot screens as part of the new Generic Clinical System development of the national SCI-DC programme, there will be the ability to store photographic images within this upgraded system.
<b>Standard 10.4 – Clinical Management: Acute Management</b>		
The rate of diabetic emergencies is monitored for all those with diabetes in the area.	Information on patients admitted to hospital with diabetes related conditions is available through SMR. At present there is no ongoing routine mechanism for monitoring diabetic emergencies.	A mechanism to monitor diabetes emergencies i.e. Diabetic Ketoacidosis (DKA) and Hypoglycaemia using biochemistry data has been developed and the robustness of this process is being tested.

# Research

## **The Wellcome Trust United Kingdom Type 2 Diabetes Genetics Consortium Case Control Collection**

This world-leading research project involving 15,000 participants in Tayside and led by Andrew Morris is almost complete and is poised to expand into other Health Board areas. It has contributed to the identification of key genes that predispose to diabetes and obesity, for example the *FTO* gene which can result in a 70% higher risk of being obese. In collaboration with international colleagues, the Dundee group have rapidly described a series of other important genetic variants, including in four separate Nature Genetics publications in the first half of 2008.

## **Scottish Diabetes Research Network**

The SDRN was established with its hub in Dundee in 2006 with a mission to enhance the quality and quantity of diabetes research in Scotland. It now manages a portfolio of more than 80 diabetes research studies with many of these funded by major bodies such as the Medical Research Council, the British Heart Foundation, The Wellcome Trust, and the Chief Scientist Office. Clinical trials are also being sponsored by 10 different pharmaceutical companies in Scotland. Under the leadership of Dr John Petrie, SDRN has established a national Research Register of people with diabetes who have given permission to be contacted with a view to participating in research projects. Many of the patient participants were recruited with the assistance of GPs and their colleagues within local Managed Clinical Networks. SDRN has produced an acclaimed DVD in which people with diabetes talk about their clinical trial participation (view at [www.sdrn.org.uk](http://www.sdrn.org.uk)). SDRN is also working to establish comprehensive systems for

unintrusive epidemiological research in diabetes at a national level in consort with the Health Informatics Centre at the University of Dundee.

## **Translational Medicine Research Consortium**

This initiative continues to develop a world-leading network of clinical and scientific excellence throughout Scotland and is based at the University of Dundee. The TMRC is a unique collaboration involving 4 Scottish universities, 4 NHS trusts, Scottish Enterprise and Wyeth, a top ten global pharmaceutical company. It is now funding patient-oriented research relevant to the development of new treatments for diabetes, including complementary projects looking at factors predicting adverse responses to “glitazones” led by John Petrie and Chim Lang which are under way in Dundee (£700,000).



# Future Priorities

The Diabetes MCN will continue to work towards delivering the Diabetes Collaborative Commissioning Promises

1. All people newly diagnosed with Type 2 diabetes will have access to quality assured, structured education through the Tayside Diabetes Education Programme (TDEP) within 1 month of diagnosis.
2. At least 75% of people with diabetes will have a foot risk score formally calculated annually.
3. All people with diabetes will have access to appropriate state registered podiatry services as indicated by their foot risk score.
4. All people with diabetes will have appropriate access to registered dietetic services in line with agreed Tayside-wide standards.
5. All people with diabetes will be managed in line with agreed "Tayside Care Pathway for Patients with Diabetes".
6. All appropriate people with Type 1 diabetes will have access to intensive management instruction via the Tayside Insulin Management Programme (TIM).
7. All people with diabetes will be offered annual eye screening by digital retinal photography.

# Clinical Outcomes and Process Information

## Presentation of information

This report has been derived from information held on the Tayside section of the Scottish Care Information - Diabetes Collaboration (SCI-DC) network and focuses on diabetes care and clinical status during the period 01/01/2008 - 31/03/2009 (15-month report period).

The figures presented in this document have been calculated using 15-month time frames compatible with the Scottish Diabetes Survey and GMS contact methodologies.

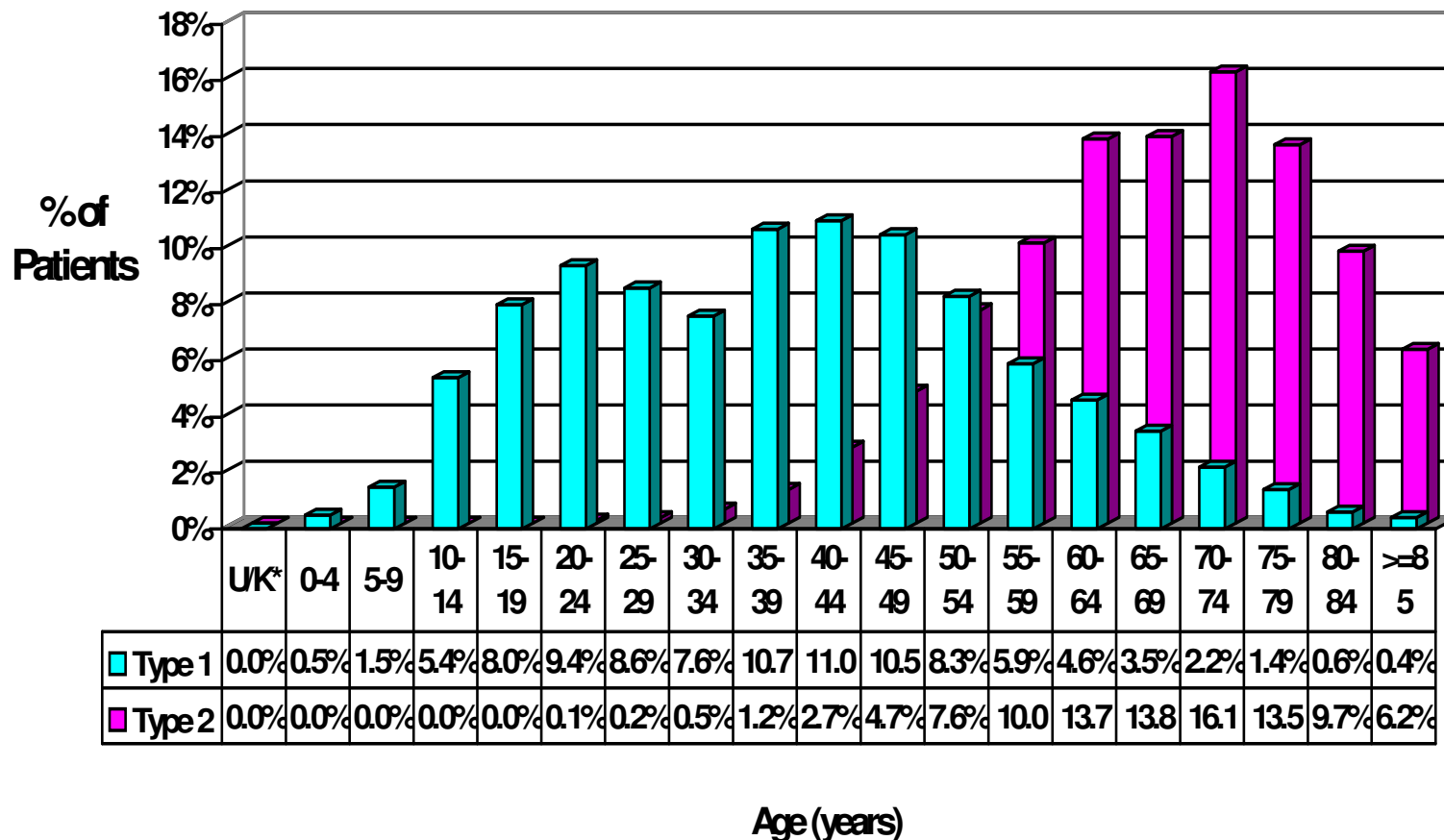
## Demographics

Prevalence of diabetes was calculated using the estimated mid-year 2008 Tayside NHS Board population as defined by the Register General for Scotland (n= 396942).

**Table 1: Age distribution and population prevalence of diabetes in Tayside on 31/03//2009**

Age range	Tayside population	Type 1 Diabetes		Type 2 Diabetes		Total prevalence
		Type 1 population	Type 1 prevalence	Type 2 population	Type 2 prevalence	
Unkn wn	0	0	0.0%	0	0.0%	<b>0.0%</b>
<b>0 - 4</b>	20809	8	0.04%	0	0.0%	<b>0.04%</b>
<b>5 - 14</b>	42748	118	0.3%	0	0.0%	<b>0.3%</b>
<b>15 - 24</b>	53137	297	0.6%	21	0.0%	<b>0.6%</b>
<b>25 - 34</b>	43185	276	0.6%	111	0.3%	<b>0.9%</b>
<b>35 - 44</b>	54006	370	0.7%	620	1.1%	<b>1.8%</b>
<b>45 - 54</b>	55883	321	0.6%	1935	3.5%	<b>4.0%</b>
<b>55 - 64</b>	52016	179	0.3%	3706	7.1%	<b>7.5%</b>
<b>65 - 74</b>	39368	96	0.2%	4697	11.9%	<b>12.2%</b>
<b>75 - 84</b>	26348	34	0.1%	3638	13.8%	<b>13.9%</b>
<b>&gt;= 85</b>	9442	7	0.1%	970	10.3%	<b>10.3%</b>
<b>Total</b>	<b>396942</b>	<b>1706</b>	<b>0.4%</b>	<b>15698</b>	<b>4.0%</b>	<b>4.4%</b>

Figure 1: Age distribution by diabetes type in Tayside on 31/03/2009 (n= 17404)



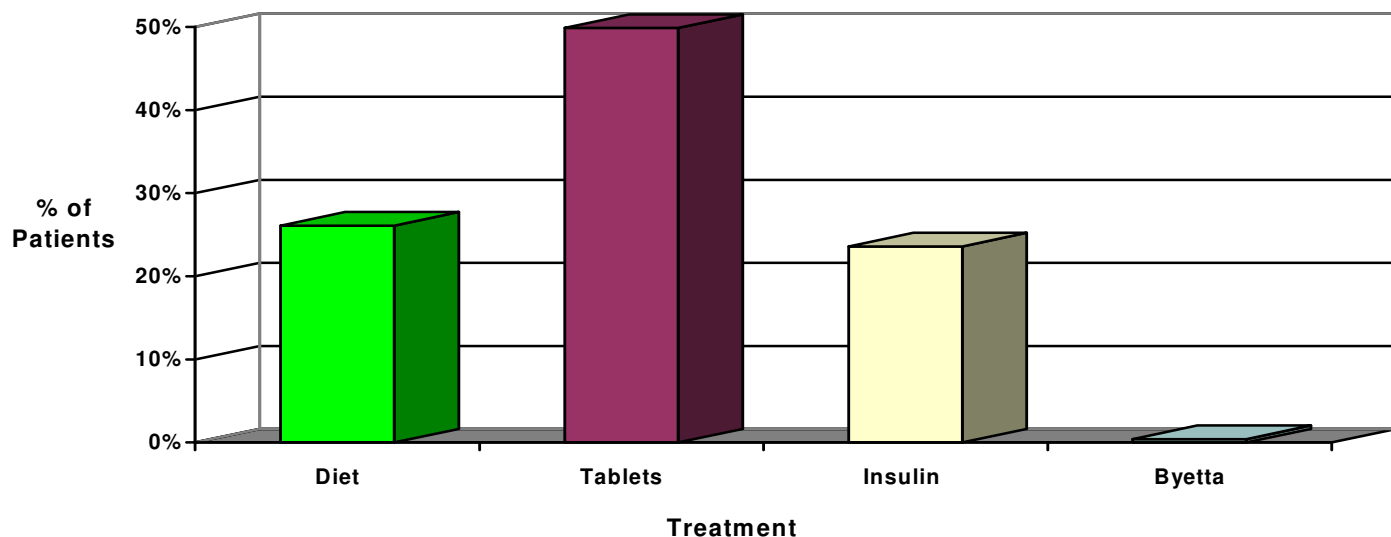
People with Type 1 diabetes are much younger with an average age of 38.8 years (range = 3-93 years) compared to 66.8 years for people with Type 2 diabetes (range = 17-101)

Table 2: Incidence of diabetes recorded by the Tayside diabetes network during the calendar year of 2008

	Diabetes Type		
	Type 1	Type 2	Total
(n)	69	1435	1504
Incidence (%)	0.02%	0.38%	0.39%

## Treatment

Figure 2: Breakdown of most treatment as a percentage of the total diabetes population used in this report (n= 17404)

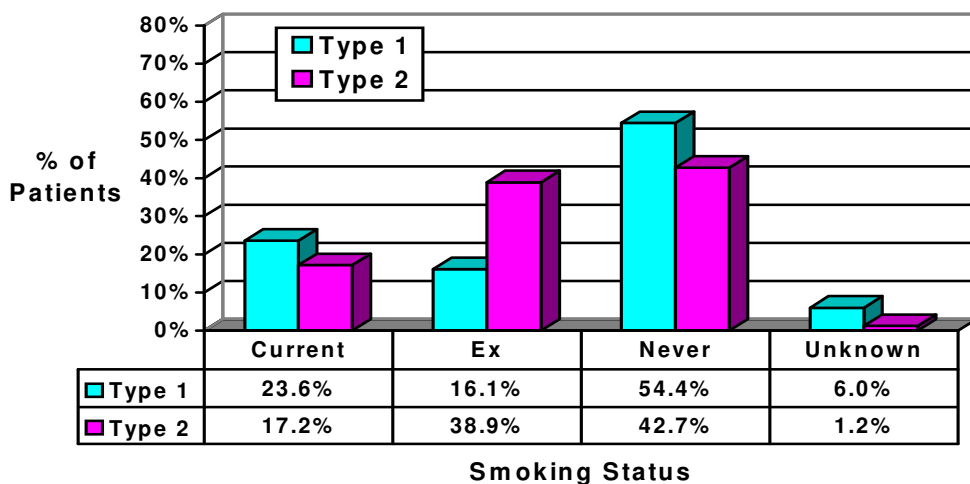


23.6% (n=4105) of all people with diabetes were treated with insulin (either insulin alone or in combination with oral medication)

55.3% (n=8680) of people with Type 2 patients were treated exclusively with oral hypoglycaemic drugs, 28% (n=4542) were controlled by dietary measures alone and 15.3% (n=2399) were treated with insulin

## Smoking

Figure 3: Most recent smoking status as a percentage of type 1 and type 2 diabetes (n= 17404)

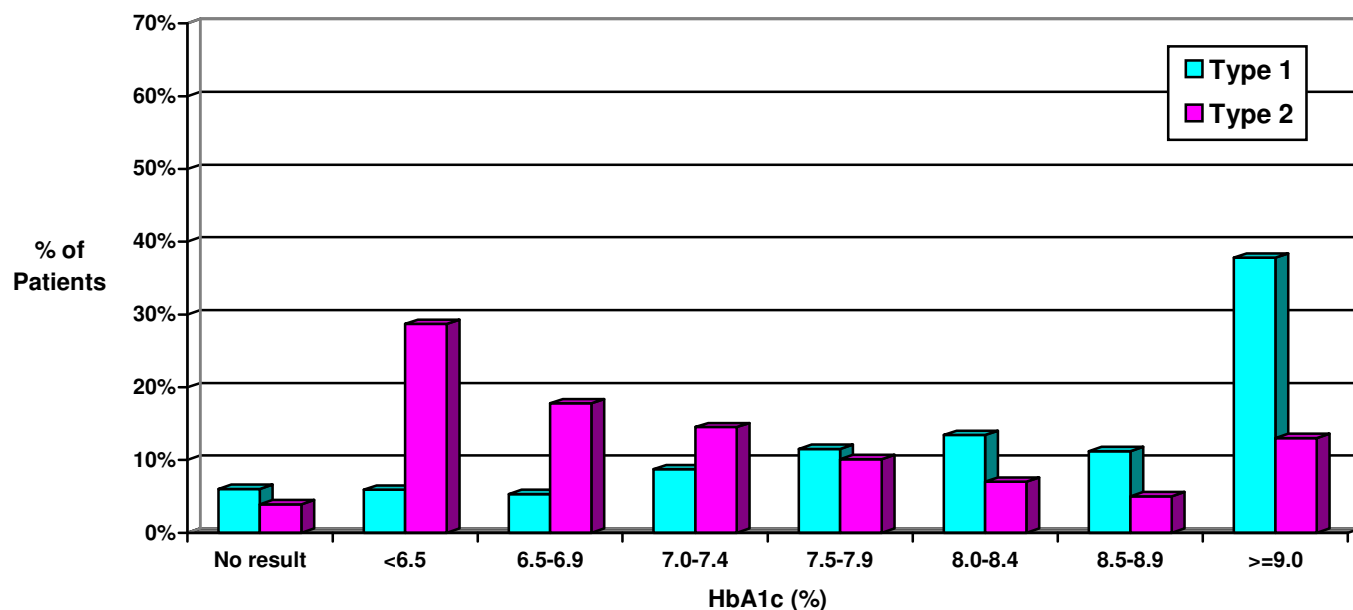


23.6% (n= 402) of people with Type 1 diabetes and 17.2% (n= 2698) with Type 2 diabetes were current smokers

## Clinical Indicators

**Figure 4: Most recent HbA1c values recorded during the report period (01/01/2008 – 31/03/2009) shown as a percentage of type 1 and type 2 diabetes (n= 17404).**

\*No Result is where no value was found or the last value was prior to the report period



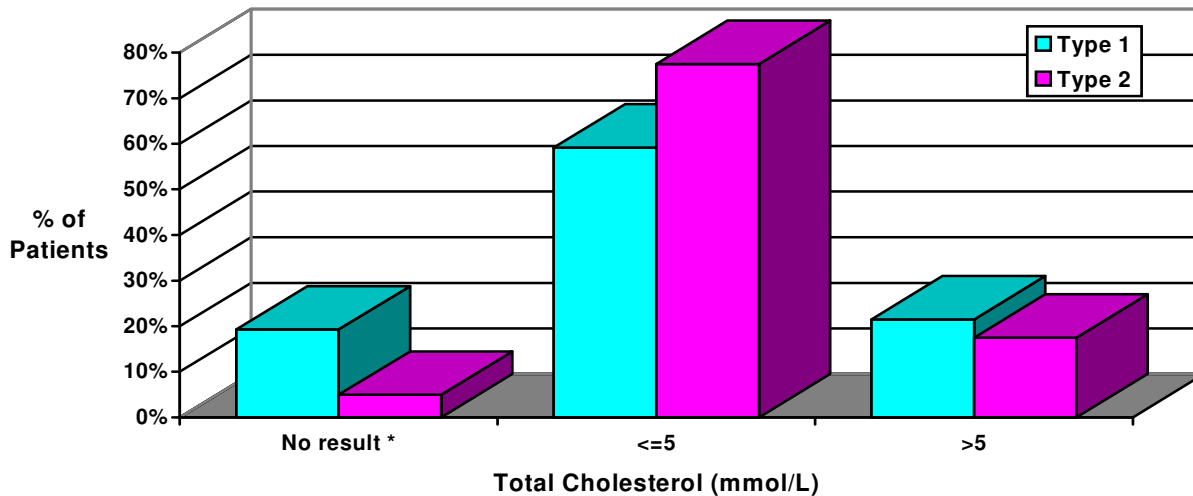
95.9% (n=16690) of people with diabetes had an HbA1c test in the report period.

Of those tested during the report period, 21.3% (n=341) of people with Type 1 diabetes and 63.5% (n=9575) with Type 2 diabetes had HbA1c values less than 7.5%

The mean HbA1c value in people with Type 1 diabetes was 8.8% (range = 4.8 – 19.4%) and with Type 2 diabetes 7.5% (range = 3.7 – 19.4%)

**Haemoglobin A1c (HbA1c)** tests measure the average amount of sugar being carried in blood over the past 2-3 months. Targets are agreed for each individual but in general good control is between 6.5% and 7.5%.

**Figure 5: Most recent total Cholesterol values recorded shown as a percentage of diabetes type**



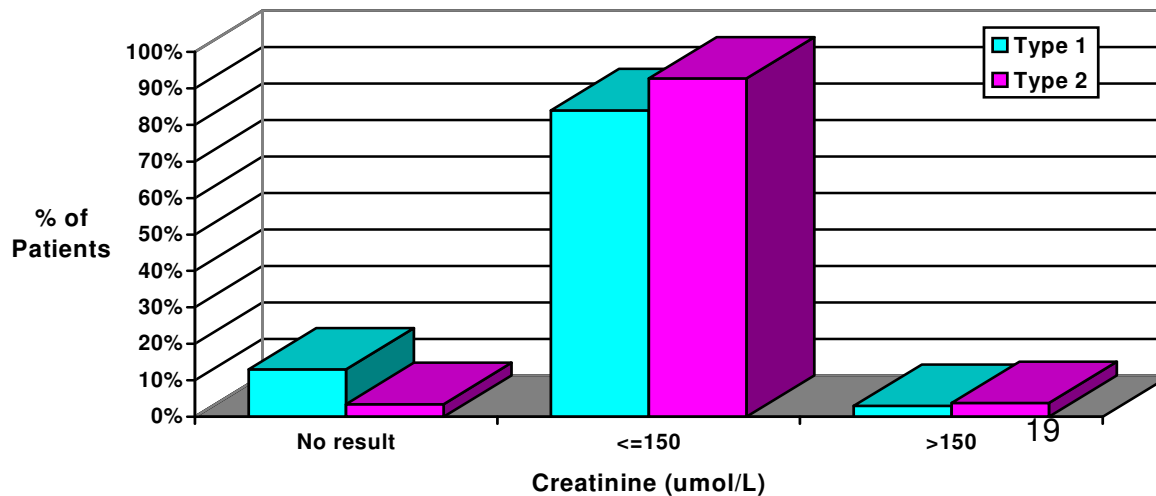
93.6% (n=16283) of all people with diabetes had a total cholesterol test during the report period

Of those tested during the report period, 73.3% (n=1010) of people with Type 1 diabetes and 81.6% (n=12165) with Type 2 had a total cholesterol value of 5 mmol/L or less.

The mean total cholesterol value was 4.5 mmol/L (range = 1.3 – 17.6 mmol/L) for people with Type 1 diabetes and 4.3 mmol/L (range = 1.4 – 16.9 mmol/L) for people with Type 2 diabetes.

**Cholesterol** is a fat carried in the blood, a value of less than 5mmol/L is clinically desirable.

**Figure 6: Most recent total Creatinine values recorded during the report period (01/01/2008 – 31/03/2009) shown as a percentage of type 1 and type 2 diabetes (n= 17404).**



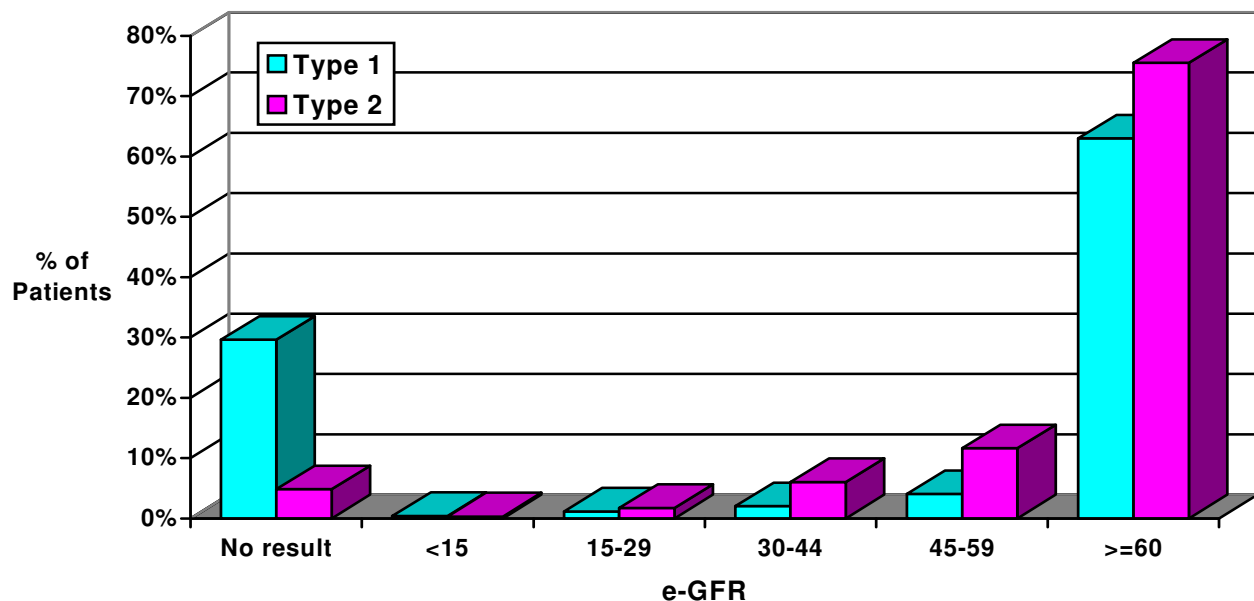
95.9% (n= 16698) of all people with diabetes had a Creatinine test during the report period

Of those tested during the report period, 97.1% (n=1467) of people with Type 1 diabetes and 96.5% (n=14660) with Type 2 diabetes had a Creatinine value <= 150 umol/L

The mean Creatinine value was 77.6 umol/L (range = 23 – 978 umol/L) for people with Type 1 diabetes and 85.3 umol/L (range = 21 – 992 umol/L) for people with Type 2 diabetes.

**Creatinine** is a waste product that is expelled from the body in the urine. A creatinine value of 150 umol/L or less is clinically desirable.

**Figure 7: Most recent total e-GFR values recorded during the report period (01/01/2008 – 31/03/2009) shown as a percentage of type 1 and type 2 diabetes (n= 17404).**



92.8% (n= 16149) of all people with diabetes had an e-GFR test during the report period

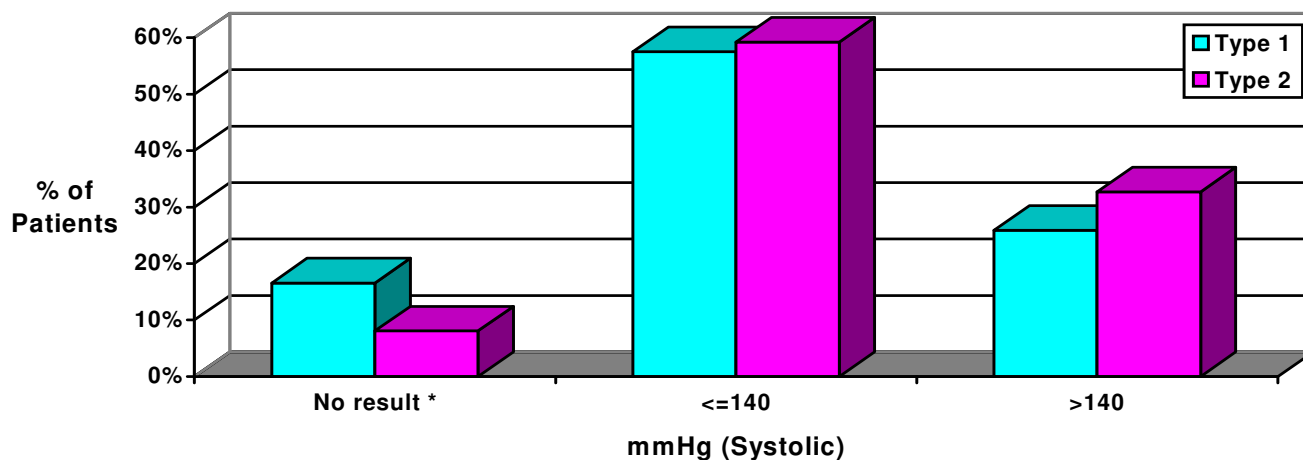
Of those tested during the report period, 89.4% (n=1074) of people with Type 1 diabetes and 79.3% (n=11857) with Type 2 diabetes had e-GFR values <=60

NOTE Tayside laboratories limit upward e-GFR results to >=60 (Normal (Stage 1 or 2)

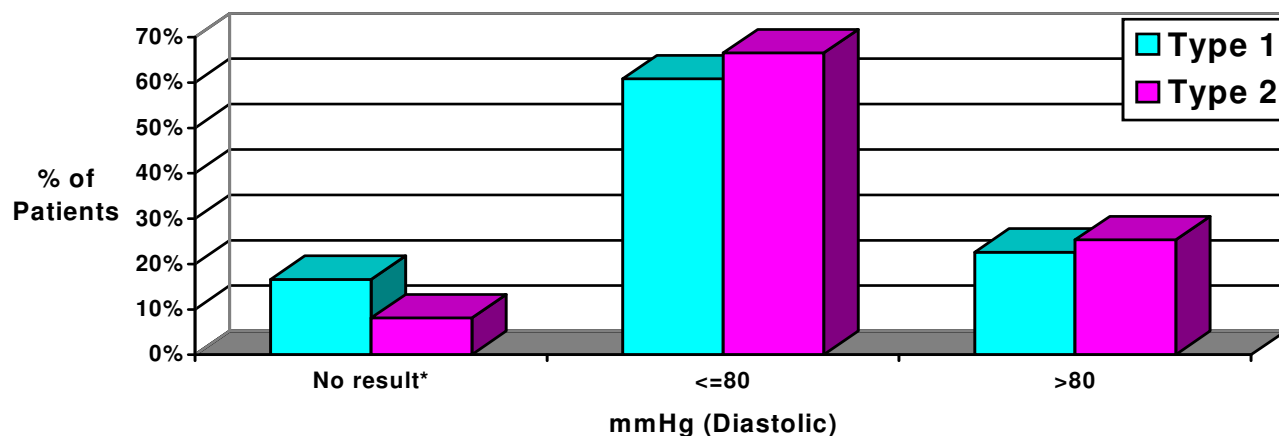
**Estimated Glomerular Filtration Rate (eGFR )** is a new Renal Function tests which is calculated from serum creatinine concentration, age, and sex. The most widely used method for this is termed “the abbreviated MDRD equation”, and this has proved to be both robust and accurate. GFR in healthy individuals is approximately 100 mL/min/1.73m<sup>2</sup>.

Stage	eGFR	Description	Treatment Stage
1	90+	Normal kidney function but urine findings or structural abnormalities or genetic trait point to kidney disease	Observation, control of blood pressure.
2	60-89	Mildly reduced kidney function, and other findings (as for stage 1) point to kidney disease	Observation, control of blood pressure and risk factors.
3A	45-59	Moderately reduced kidney function	Observation, control of blood pressure and risk factors.
3B	30-44	Moderately reduced kidney function	Observation, control of blood pressure and risk factors.
4	15-29	Severely reduced kidney function	Planning for endstage renal failure. Urgent referral or discussion or routine referral if known to be stable.
5	<15	Very severe, or endstage kidney failure (sometimes call established renal failure)	Treatment choices. Immediate discussion and referral to Renal Physician.

**Blood Pressure show as a percentage of diabetes type**  
**Figure 8: Most recent SYSTOLIC blood pressure values recorded**



**Figure 9: Most recent DIASTOLIC blood pressure values recorded**



96.1% (n=16729) of all people with diabetes had a blood pressure check during the report period

Of those tested during the report period:  
 76.6% (n=1097) of people with Type 1 diabetes and 67.9% (n=10388) with Type 2 diabetes had a systolic value of 140 mmHg or less.

74.8% (n=1071) of people with Type 1 diabetes and 73.5% (n=11248) with Type 2 diabetes had a diastolic value of 80 mmHg or less

Total mean blood pressure:

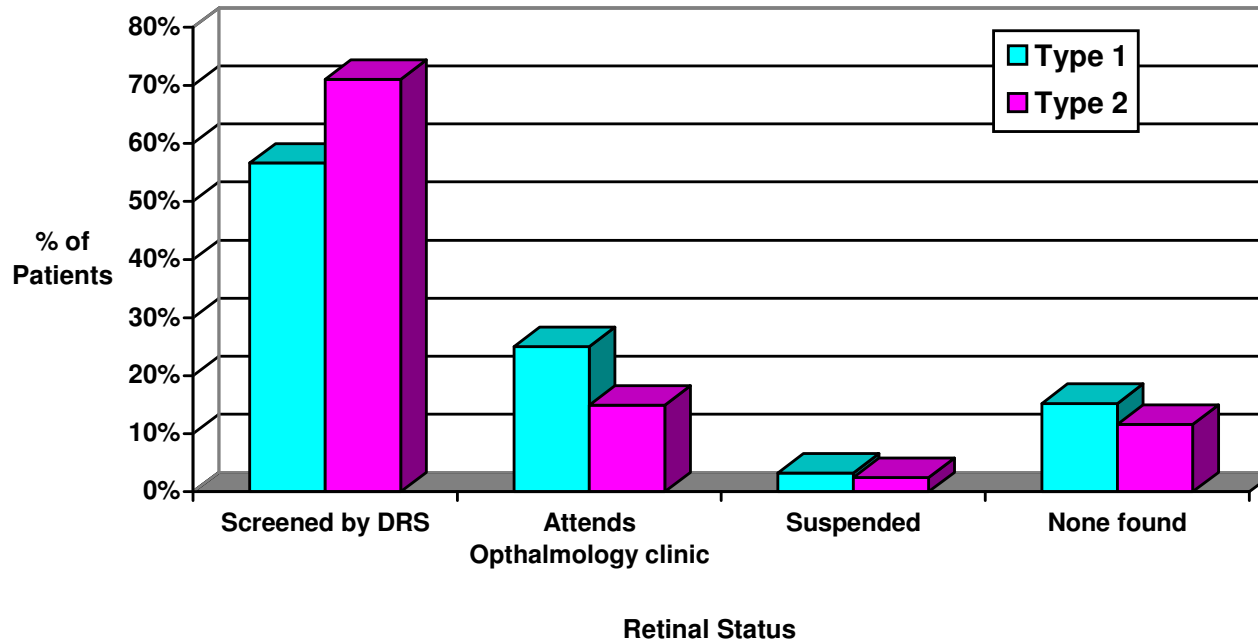
For people with Type 1 diabetes was 131/74mmHg

For people with Type 2 diabetes was 136/75mmHg

*For the above blood pressure data, systolic and diastolic blood pressure values were analysed separately. From this information, theoretical mean blood pressure values (systolic/diastolic) for type 1 and type 2 diabetic populations have been produced.*

**High blood pressure (BP) or hypertension** is common in people with diabetes. For most patients, Systolic Blood Pressure (the top value) should be: 140 mmHg or less and Diastolic Blood Pressure (the bottom value) should be: 80 mmHg or less

**Figure 10: Most recent Retinal status recorded during the report period (01/01/2008 – 31/03/2009) shown as a percentage of type 1 and type 2 diabetes (n= 17404).**



85.3% of eligible people with diabetes were screened during the period.

88% (n= 15320) of patients were appropriately catered for in regard to eye care (i.e. they were either screened, attending ophthalmology or were clinically suspended from screening)

Of those with a screening result, 58.1% (n=919) of people with Type 1 diabetes and 28.0% (n=4115) with type 2 diabetes had some degree of retinopathy.

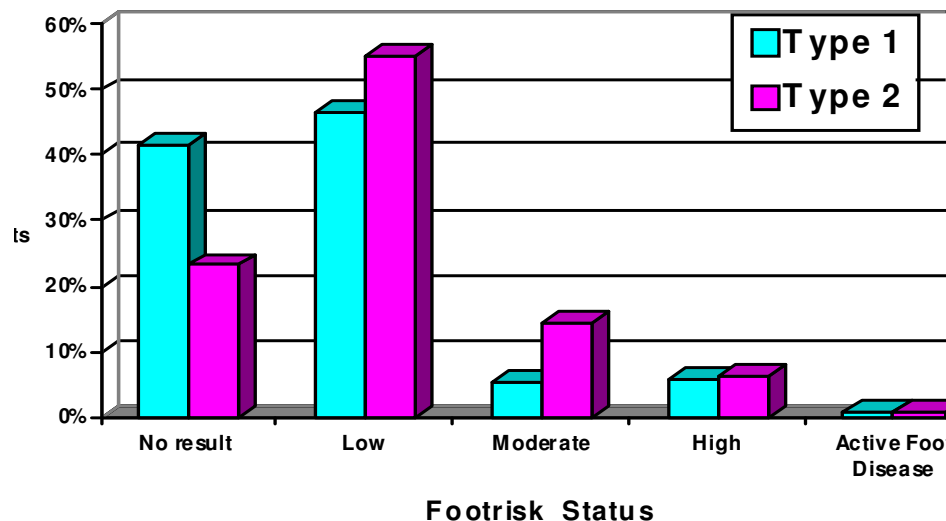
Note: eye screening is limited to Digital Image Photography or evaluation at Ophthalmology clinic

Everyone with diabetes runs the risk of developing an eye disease called **Diabetic Retinopathy**. Development or progression of diabetic retinopathy can be prevented by good control of blood sugar and blood pressure.

\*No Result is where no value was found or the last value was inappropriate (e.g. funduscopy) or was prior to the report period

\*\*Unknown is where an assessment was performed but the result was still pending or could not be determined due to the retina being obscured, etc

**Figure 11: Most recent Footrisk assessment recorded during the report period (01/01/2008 – 31/03/2009) shown as a percentage of type 1 and type 2 diabetes.**

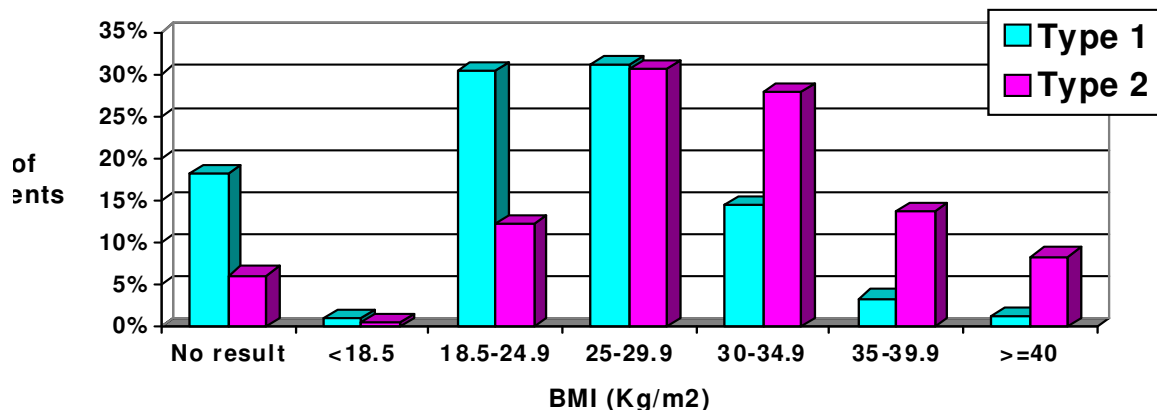


75.0% (n= 13049) of all people with diabetes had a footrisk assessment undertaken during the report period

Of those assessed during the report period, 19.1% (n=190) of people with Type 1 diabetes and 26.9% (n=3243) with Type 2 diabetes had a moderate or high footrisk score. 1.3% (n=13) of people with Type 1 diabetes and 1.1% (n=128) with Type 2 diabetes had Active Foot Disease

Diabetes can have an effect on the blood and nerve supply, which can lead to complications in the leg and foot. Not everyone will develop these problems, but ALL people with diabetes should have their foot risk assessed regularly. Maintaining good blood sugar and weight control is very important, as is avoiding smoking.

**Figure 12: Most recent Body Mass Index (BMI) values recorded during the report period (01/01/2008 – 31/03/2009) shown as percentage of diabetes type.**



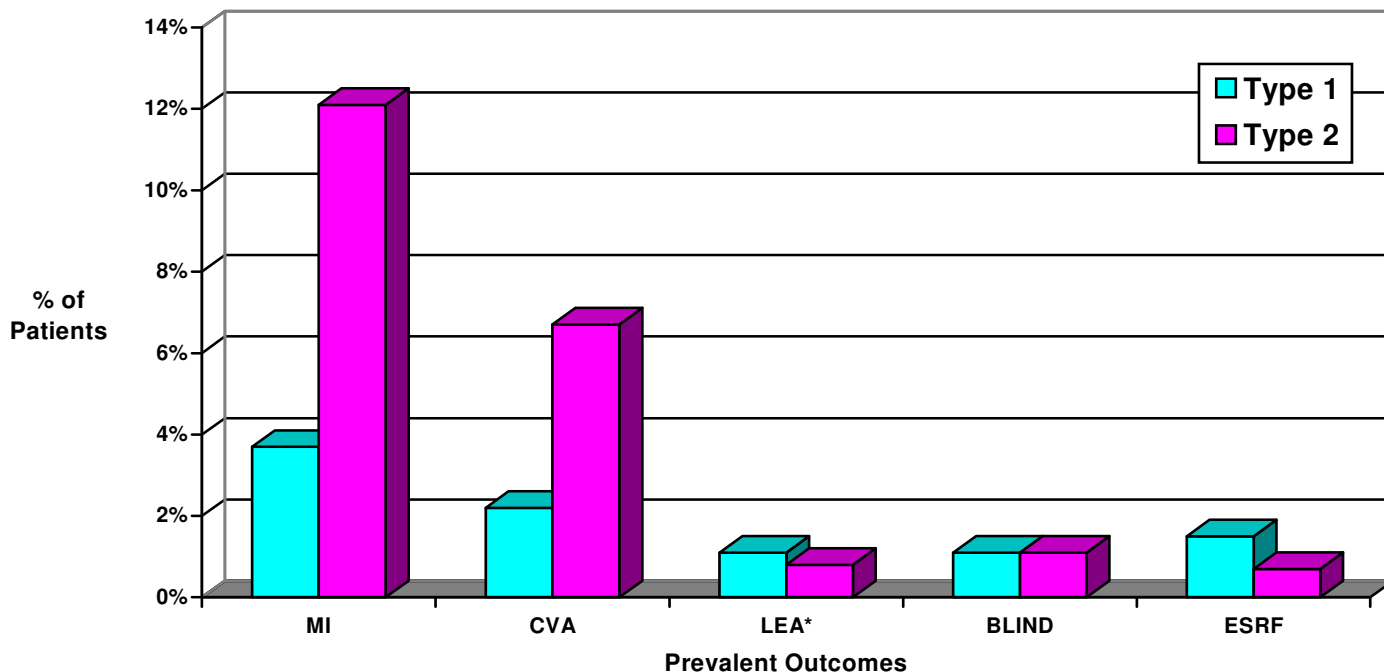
92.6% (n= 16122) of all people with diabetes had a BMI value recorded.

Of those with a BMI value recorded during the report period, 64.5% (n=858) of people with Type 1 diabetes and 86.2% (n=12695) with Type 2 diabetes had a BMI value of 25 kg/m<sup>2</sup> (overweight) or more

The mean BMI value for people with Type 1 diabetes was 26.9 kg/m<sup>2</sup> (range = 14.1 kg/m<sup>2</sup> – 53.4 kg/m<sup>2</sup>) and for people with Type 2 diabetes 31.3 kg/m<sup>2</sup> (range = 13.3 kg/m<sup>2</sup> – 78.9 kg/m<sup>2</sup>)

## Prevalent outcomes

Figure 13: Prevalence of outcomes as a percentage of diabetes type on 31/03/2009



Of all people with diabetes:

- 11.3% (n=1965) had a history of myocardial infarction (MI)
- 6.2% (n=1083) a history of CVA
- 0.9% (n=151) a history of lower limb amputation\*
- 1.1% (n= 199) were categorised blind
- 0.7% (n=128) a history of end-stage renal failure

*Prevalent outcome figures are limited to patients who were alive, had Type 1 or Type 2 diabetes and were registered with a Tayside GP on 31/03/2009 (n=17404)*

- Excludes digits

**Myocardial Infarction (MI)** = commonly described as a heart attack

**Cerebrovascular Accident (CVA)** = commonly described as a stroke

**Lower Extremity Amputation (LEA)** = surgical removal of any part of the leg from the knee down but not including digits (toes)

**Blind** = is when visual acuity in both eyes is less than 3/60 (i.e. the patient can “count fingers”, see “hand movements” or “perceive light”) or the patient is formally registered blind

**End Stage Renal Failure (ESRF)** – when the patient’s kidney function has deteriorated to the point that dialysis or transplant is required

## Comparison of Indicators Over Time

COMPARATOR	<u>01/03/2005-31/05/2006</u> (15 months)	<u>01/10/2005-31/12/2006</u> (15 months)	<u>01/10/2006-31/12/2007</u> (15 months)	<u>01/01/2008-31/03/2009</u> (15 months)
<b>Diabetes prevalence*</b>	14900 patients (3.8%)	15207 patients (3.9%)	16150 patients (4.1%)	17404 patients (4.4%)
<b>Diabetes incidence**</b>	1357 patients (0.36%)	1346 patients (0.36%)	1289 patients (0.34%)	1504 patients (0.39%)
<b>HbA1c testing</b>	14143 patients (94.9%)	14629 patients (96.2%)	15382 patients (95.2%)	16690 patients (95.9%)
<b>Mean HbA1c</b>	7.6% (Range = 4.1 – 20.9%)	7.5% (Range = 4.1 – 20.0%)	7.4% (Range = 3.7 – 18.3%)	7.4% (Range = 3.7 – 19.4%)
<b>Cholesterol testing</b>	13326 patients (89.4%)	14276 patients (93.9%)	15128 patients (93.7%)	16283 patients (93.6%)
<b>Mean Cholesterol</b>	4.4 mmol/L (Range = 1.5 – 14.4)	4.4 mmol/L (Range = 1.4 – 15.1)	4.4 mmol/L (Range = 1.1 – 13.6)	4.3 mmol/L (Range = 1.4 – 17.6)
<b>Estimated GFR</b>	Not in this report	Not in this report	14877 patients (92.1%)	16149 patients (92.8%)
<b>Blood pressure testing</b>	13380 patients (89.8%)	13792 patients (90.7%)	14680 patients (90.9%)	16729 patients (96.1%)
<b>Mean blood pressure</b>	138/75 mmHg	137/75 mmHg	137/75 mmHg	136/75 mmHg
<b>Eye screening</b>	12880 patients*** (86.4%)	11879 patients (78.1%)	13175 patients (81.6%)	14880 patients (85.5%)
<b>Foot risk screening</b>	Not in this report	Not in this report	5820 patients (36.0%)	13049 patients (75.0%)
<b>Body Mass Index screening</b>	13039 patients (87.5%)	13385 patients (88.0%)	14133 patients (87.5%)	16122 patients (92.6%)
<b>Mean Body Mass Index</b>	30.3 kg/m <sup>2</sup> (Range = 15.1 – 69.0)	30.5 kg/m <sup>2</sup> (Range = 15.1 – 68.3)	30.7 kg/m <sup>2</sup> (Range = 13.4 – 66.7)	30.9 kg/m <sup>2</sup> (Range = 13.4 – 78.9)

\*Prevalence populations are limited to patients with type 1 or type 2 diabetes who were alive and registered with a Tayside general practitioner last day of the report period. Denominators are via the GRO mid-year population estimates for Tayside for each year.

\*\*Incidence populations are limited to patients diagnosed with type 1 or type 2 diabetes during a 12 month period (as specified in each report)

\*\*\*Eye-screenings in this report includes fundoscopy and other non-specialised visual assessments performed in diabetes clinics and GP practices, etc. Subsequent reports are limited Digital Image photography or attendance at an Ophthalmology clinic in accordance with a change in national guidelines

# Network Contacts and Primary Work Base

## **Tayside Network Board Members:**

Dr Vicky Alexander, Consultant Paediatrician  
Mrs Debbie Voigt, Diabetes Specialist Nurse  
Mr Paul Ballard, Deputy Director of Public Health  
Dr Geraldine Brennan, Consultant Physician  
Mr Brian Christie, Head of Podiatry  
Mrs Marion Christie, Head of AHP Services  
Dr Alan Connacher, Co-Chair/Consultant Physician  
Mrs Angela Ellingford, Diabetic Retinopathy Screening Manager  
Mrs Gillian Costello, Head of Centre for MCNs  
Dr Ellie Dow, Consultant in Biochemical Medicine  
Dr John Ellis, Consultant Ophthalmologist  
Dr Alistair Emslie-Smith, Network Lead Clinician/General Practitioner  
Mr Stewart Forsyth, Medical Director  
Mrs Kay Fowlie, Clinical Group Manager  
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Mrs Rhona Guild, Primary Care Development Co-ordinator  
Ms Jackie Hodges, Practice Nurse  
Dr Margaret Kenicer, Consultant in Public Health  
Dr Graham Kramer, General Practitioner  
Dr Graham Leese, Consultant Physician  
Mr David Lynch, General Manager  
Ms Vivian Mann, Patient Council  
Mr Andy McQueen, Patient Council  
Professor Andrew Morris, Professor of Diabetic Medicine  
Dr John Petrie, Reader in Diabetic Medicine  
Dr Iain Spence, Patient Council  
Dr Graeme Sutherland, Co-Chair/General Practitioner  
Ms Angela Timoney, Director of Pharmacy  
Dr Drew Walker, Consultant in Public Health  
Miss Edith Walters, Head of Dietetics  
Ms Debbie Whitton, Practice Nurse  
Mrs Elaine Wilson, Clinical Network Manager  
Dr Sandy Young, General Practitioner

## **Network Core Team:**

Dr Alistair Emslie-Smith, Network Lead Clinician  
Mr Kenny Hill, IT Technical Support  
Mr Ritchie McAlpine, Clinical Information Facilitator  
Ms Elaine Wilson, Clinical Network Manager  
**Base:** Ninewells Hospital, Dundee

## **Specialist Medical Team**

Dr Vicky Alexander, Consultant Paediatrician, Ninewells Hospital  
Dr Geraldine Brennan, Consultant, Ninewells Hospital  
Dr Gillian Clark, Clinical Assistant, Ninewells Hospital  
Dr Alan Connacher, Consultant, Perth Royal Infirmary  
Dr Ellie Dow, Consultant Biochemical Medicine, Ninewells Hospital  
Dr Alasdair Dutton, Clinical Assistant, Perth Royal Infirmary  
Dr Stephen Greene, Consultant Paediatrician, Ninewells Hospital  
Dr Graham Leese, Consultant, Ninewells Hospital  
Dr Laura Jordan, Specialist Registrar, Ninewells Hospital  
Dr Ellen Malcom, Staff Grade, Ninewells Hospital  
Professor Andrew Morris, Professor of Diabetic Medicine, University of Dundee, Ninewells Hospital  
Dr Ewan Pearson, Clinical Lecturer, University of Dundee, Ninewells Hospital  
Dr John Petrie, Reader in Diabetic Medicine, University of Dundee, Ninewells Hospital  
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Dr Sandy Young, Clinical Assistant, Ninewells Hospital

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Susan Chisholm, Perth Royal Infirmary  
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Kirsten McLean, Ninewells Hospital  
Lesley Matheson, Ninewells Hospital  
Valerie Ramsey, Paediatrics, Ninewells Hospital  
Mary Robertson, Ninewells Hospital, Dundee  
Christine Sturrock, Paediatrics, Ninewells Hospital  
Debbie Voigt, Ninewells Hospital  
Gillian Wilkie, Ninewells Hospital

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Caroline Brown, Stracathro Hospital, Brechin  
Lesley Grant, Ninewells Hospital  
Zoe Magnier, Ninewells Hospital  
Edith Walters, Perth Royal Infirmary

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Joanne Bell, Ninewells Hospital  
Judith Golden, Ninewells Hospital  
Vicky Green, Ninewells Hospital  
Brian McMurray, Ninewells Hospital  
Brian Christie, Head of Podiatry, Westgate Health Centre  
Florence Reid, Perth Royal Infirmary  
Susan Reid, Arbroath Infirmary  
Susan Dryburgh, Arbroath Infirmary

**Retinal Screening Service**

Richard Clarke, Senior Retinal Screener, Ninewells Hospital  
Angela Ellingford, Retinal Screening Manager, Ninewells Hospital  
Lorraine Fullerton, Retinal Screener, Ninewells Hospital  
Elizabeth McKelvie, Retinal Screener, Ninewells Hospital  
Reginald Whitaker, Retinal Screener, Ninewells Hospital

**Psychologists**

Shona Murphy, Paediatrics, Centre for Child Health, Dundee

**Clinic Secretaries**

Jane Aitken, Perth Royal Infirmary  
Marianne Cowie, Stracathro Hospital  
Margaret Paton, Ninewells Hospital  
Moria Gardiner, Ninewells Hospital  
Julia Royle, Young Adult Clinic, Ninewells Hospital

**This annual report can be accessed from the NHS Tayside**

**Diabetes MCN Website at:**

**[www.diabetes-healthnet.ac.uk](http://www.diabetes-healthnet.ac.uk)**

**If you would like further copies of the report or further information on any of the information contained in the report please contact Elaine Wilson at:**

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Level 8  
Ninewells Hospital  
Dundee DD1 9SY**

Dokumenty dostępne są również w języku polskim i w innych formatach (rozmiar/ kształt) na żądanie. Kontakt: NHS Tayside, wydział ds. łączności (centrala NHS) 01382 424131.

Listiny jsou na požádání dostupné taky v jiných jazycích a formátech. Kontaktujte oddělení komunikací NHS Tayside (Communications Department) na čísle 01382 424138.

此文件設有其他語文譯本及版式,請聯絡國家保健服務聯絡部

(NHS)Tayside Communication Departments 索取 , 電話:01382 424138

درخواست کرنے پر دستاویزات دوسری زبانوں اور فارمیٹس میں بھی فراہم کئے جاسکتے ہیں۔ ٹے سائڈ کمیونیکیشن ڈپارٹمنٹ سے فون نمبر 01382 424138 پر رابطہ کریں۔

درخواست کرنے پر دستاویزات دوسری زبانوں اور فارمیٹس میں بھی فراہم کئے جاسکتے ہیں۔ ٹے سائڈ کمیونیکیشن ڈپارٹمنٹ سے فون نمبر 01382 424138 پر رابطہ کریں۔

Documents can be made available in other languages and formats on request. Contact NHS Tayside Communications Department on 01382 424138.

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