

The development of T2ONIC (Type 2 on Insulin Course)

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Article points

1. This article outlines the development of T2ONIC (Type 2 on Insulin Course), which is a structured education course designed for people with type 2 diabetes taking insulin.
2. The T2ONIC programme is designed for participants to have a better understanding of their diabetes and to help them have more informed conversations with their healthcare professionals, enhancing their ability to take control and make their own changes.
3. The course has received positive feedback from participants and has led to some reductions in HbA_{1c}.

Key words

- Structured education
- Type 2 diabetes

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The Type 2 on Insulin Course (T2ONIC) is a structured education programme offered to people with type 2 diabetes on insulin. The course runs over three weeks, with a follow up at three months. Sessions are facilitated by a DSN and a diabetes specialist dietitian. Participants, with the help of their primary healthcare team, are encouraged to collate their own personal health profile before the programme and complete psychological assessments during the initial session. The results are used as part of the discussion during the course. Despite facing initial difficulties with staff resources, particularly administration support and financial constraints, T2ONIC is well received and is evaluated positively by participants. T2ONIC meets the core objective of providing participants with the confidence to self-manage their own diabetes.

In Nottingham, structured education programmes for people with type 1 diabetes and newly diagnosed type 2 diabetes have been well established. The Nottingham University Hospitals NHS Trust delivers both DAFNE (Dose Adjustment For Normal Eating) and, until very recently, EDWARD (Education for Diabetes Without A Restricted Diet) for people with type 1 diabetes. Both of these education programmes have published data, both nationally and internationally (Houghton et al, 2013a; 2013b) and both show an improvement in HbA_{1c} and well-being, and reduction in insulin requirements.

The Nottinghamshire clinical commissioning groups commissioned Juggle, a course for people with type 2 diabetes not on insulin (see <http://bit.ly/1HCGbbe> [accessed 01.12.15]). The need for patient education and specifically structured education is recognised at a national level and identified in the *National Service Framework for Diabetes*, standards 3 and 4 (Department

of Health, 2001). The *Quality Standard for Diabetes in Adults* (NICE, 2011) states that:

“People with diabetes and/or their carers receive a structured educational programme that fulfils the nationally agreed criteria from the time of diagnosis, with annual review and access to on-going education.”

With this in mind, and the increasing number of people with type 2 diabetes on insulin trying to access education, a course was designed specifically for this group. We realised that due to the variety of insulin regimens used by this group and their often complex comorbidities, the courses used for people with type 1 diabetes did not meet their needs. A literature search prior to the course development failed to identify any education programmes for these individuals. In 2009, T2ONIC (Type 2 on Insulin Course) was developed with the ethos and philosophy of

the *National Service Framework* standards and NICE recommendations embedded within it. Since 2009 others have recognised this need and programmes have been adapted from courses for people with newly diagnosed diabetes (www.xperthealth.org.uk).

Developing T2ONIC

Having established that there was no provision of structured education for people with type 2 diabetes on insulin, we elicited patients' views during a focus group discussion. These individuals were consulted on course content, structure and length. We reviewed educational materials from established courses designed for people with type 2 diabetes not on insulin and courses for those with type 1 diabetes. Together with these findings, we based a pilot programme on the NICE (2003) definition of structured education by using flexible content responsive to the clinical and psychological needs of the individual, and adaptable to their educational and cultural backgrounds.

Three pilot courses were evaluated. Evidence showed that, of those participants who had pre- and post-clinical data collected, 9 out of 15 had a reduction in HbA_{1c} and had improved scores on pre- and post-course knowledge questionnaires.

We formalised the T2ONIC programme, which has now become an established course for people with type 2 diabetes on insulin in Nottingham.

The T2ONIC programme

The T2ONIC programme is designed for participants to have a better understanding of their diabetes and to help them have more informed conversations with their healthcare professionals, enhancing their ability to take control and make their own changes. It consists of ten hours of education run as 3-hour sessions, over three weeks and with a further 1-hour follow-up session at three months.

The emphasis of the programme is on patient-centred care, with encouragement of self-management. This is done by encouraging the participants to set up to three SMART (Specific, Measurable, Achievable, Realistic and Time

bound) goals at the end of each session. Great importance is placed on the three-month follow up as this allows participants to reassess their ability to self-manage in everyday life situations and gain further support from their peers and facilitators on how to continue to achieve their goals and set further goals. The NHS Year of Care programme has found that some people with diabetes articulated how setting their own goals helped them to take ownership of their condition and this made it easier for them to manage their diabetes (NHS, 2011). Therefore, the philosophy and principles of Year of Care are embedded within the programme.

The programme uses adult learning theories and facilitation theories (humanist approach). The Adult Learning Theory believes that adults bring experience to the learning environment and this can be used by the educator. The participants are encouraged to share their own experiences of living with diabetes and these experiences are then discussed to help build their self-management skills. This theory believes the adult learner should be involved as much as possible in the design and implementation of the programme (Knowles, 1984).

The facilitation theory believes that by the educator acting as a facilitator, learning will occur (Rogers, 1968). The role of the facilitator is to listen and encourage participation. The setting of personal goals at the end of each session promotes self-learning.

Facilitators

Each group is facilitated by a DSN and a diabetes specialist dietitian. The facilitators all have adult education qualifications or are working towards these. To become a facilitator each person must first of all observe a course and then be observed and reviewed running this course. If they pass the review, they can then go on and facilitate future courses. As of yet, there is no further peer review structure in place due to limited resources. This is currently being developed and something we hope to have in place shortly.

Participants and session content

A maximum of ten people with type 2 diabetes

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2. The emphasis of the programme is on patient-centred care, with encouragement of self-management.
3. Great importance is placed on the three-month follow up as this allows participants to reassess their ability to self-manage in everyday life situations.

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1. Participants must have type 2 diabetes and must be able attend all sessions, including the follow up.
2. Participants with learning difficulties or who have physical disabilities, such as visual impairment, are welcomed and encouraged to attend sessions alongside a family member or carer.
3. T2ONIC has a written curriculum with lesson plans that are designed to be interactive and inclusive.

<p>Box 1. T2ONIC course programme.</p> <p>Week 1</p> <ul style="list-style-type: none"> ● Introduction and ice-breaker game. ● Completing Hospital Anxiety and Depression Scale (HADS) and Problem Areas in Diabetes (PAID) questionnaire. ● Defining own goals/reasons for attending course. ● Organs of the body: Where are they? ● Digestion of carbohydrates. ● What is diabetes? ● Treatments for diabetes: How do they work? ● Personal health plan. ● Setting goals. <p>Week 2</p> <ul style="list-style-type: none"> ● Welcome and how's your week been? Did you achieve your goals? ● Recap: What is diabetes? ● Activity. ● Eat well plate (NHS Choices). ● Where does glucose come from? ● Quantity and quality of carbohydrate. ● Personal health plan. ● Setting goals. <p>Week 3</p> <ul style="list-style-type: none"> ● Welcome back and how's your week gone? Did you achieve your goals? ● Recap: What is diabetes? ● Hypoglycaemia. ● Hyperglycaemia. ● Long-term complications. ● Reviewing blood tests, and HADS and PAIDs. ● Going out. ● Quiz. ● Setting goals longer term. ● Evaluation. <p>Three-month follow up</p> <ul style="list-style-type: none"> ● Welcome back and how's it been? Did you achieve your goals? ● Recap: What is diabetes? ● Recap: Food and lifestyle. ● Where do you go now? ● Setting goals for the future. ● Evaluation.

on insulin treatment are invited to attend and must meet the following criteria:

- They must have type 2 diabetes and require insulin as part of their treatment.

- They must be able to attend all sessions.

Participants with learning difficulties or who have physical disabilities, such as visual impairment, are welcomed and encouraged to attend sessions alongside a family member or carer.

The programme course is detailed in *Box 1*. There is a strong focus throughout the course on developing self-management skills and confidence to take ownership of their own diabetes.

T2ONIC has a written curriculum with lesson plans that are designed to be interactive and inclusive. NICE states that educational programmes should meet the needs of the broadest possible range of people with diabetes (NICE, 2003). People from different cultures and ethnic groups, and those who have disabilities or who live in more remote areas, all need to be considered. Sessions can take place in a range of settings to accommodate different needs. Courses currently take place either in the community or at a local diabetes centre. The venues used for T2ONIC are assessed for disabled access, suitability for group teaching, cleanliness and location before they are used.

To ensure T2ONIC meets this NICE standard, we use a wide range of resources and incorporate different adult learning methods. Participants are welcome to bring relatives, carers or friends, if they feel they need the extra support. The participants are provided with a comprehensive written manual, which has been adapted in large print and developed over the past year through feedback from participants. It now includes diagrams and pictures to illustrate the various concepts discussed on the course.

Once the participants have accepted a place on the course, a personal health profile is sent out to collect their most recent clinical data, including HbA_{1c}, renal function, lipids, blood pressure and weight. A letter of explanation is also sent to the individual's GP. By asking them to gather this information from their healthcare teams themselves, the participants begin to take ownership and engage more actively in their diabetes management. The tests and the results are explained in week 3 of the course, with the view of empowering the participant to have

more informed discussions with their diabetes healthcare team about future results and impact on their health. This process of collecting data is repeated prior to the three-month follow up session. This data is collated and enables us to measure the effectiveness of the programme.

Psychological assessment

Psychological assessment is also important as it is recognised that the risk of depression is almost double in people with type 2 diabetes, compared to the general population. This in turn increases the risk of hyperglycaemia and doubles the risk of complications related to diabetes (Anderson et al, 2001). The DAWN Study (Diabetes Attitudes, Wishes and Needs) revealed that just over 80% of people reported distress at diagnosis and over 15 years later living with diabetes remained a problem, with over 41% of people with diabetes reporting poor well-being (Peyrot et al, 2005). The DAWN2 study indicated that psychological support should be a priority, along with education, to teach self-management. It is also recognised that, despite knowing the benefits of self-management education, less than half of the people living with diabetes participated in any programme (Nicolucci et al, 2013). Prior to the introduction of the T2ONIC education course, psychological well-being for this group of people with diabetes was often ignored and support was not always offered.

Psychological well-being is assessed at the start of the course with the Hospital Anxiety Depression Score (HADS) and the Problems Areas in Diabetes (PAID) questionnaire. HADS is a questionnaire used in medical outpatient clinics to assess the severity of anxiety and depression (Bjelland et al, 2002). The PAID questionnaire is a questionnaire to measure psychosocial adjustment specific to diabetes (Snoek et al, 2000). The HADS and PAID scores are sent to the participant's GP and, where appropriate, recommendation given that the GP arranges to see the participant to discuss the outcome of the psychological assessment and establish what further support is needed.

Working in partnership with the participants is part of the philosophy of the course and

Box 1. Feedback from the T2ONIC course.

What have you found most useful?

"Understanding more about diabetes, being in a group for feedback."

"All of it, especially the body board."

"Have learnt a lot to better my control."

"Talking about the diabetes with team leaders and other people with my complaint."

"Non-threatening/judgemental teaching. [This is] encouraging."

"Understanding of how insulin works."

What have you found least useful?

"Can't think of anything."

"None. All useful, all relevant."

"I found information on glucose a little confusing."

Was the written information helpful?

"Yes, made me think and re-assess."

"Yes, because you can't take everything in... you can refer to it."

"It gave you time to digest everything."

Quotes from three-month follow up evaluation form

"Coming on this course has made me more aware that I have diabetes and can do something about it."

"I now feel confident to change my insulin."

"I didn't think I was allowed to alter my insulin and I had to get permission from the doctor, but now I can and feel more confident to exercise as I can lower my dose."

"I started playing bowls again, something I did years ago and really enjoy it."

participants are also informed of their score, provided an explanation of its meaning and informed that details have been sent to their GP. They are also informed of counselling services available to them.

At the end of the third session and the follow-up session participants are asked to complete a course evaluation form. These are reviewed and help shape future courses (see *Box 2*).

Outcomes

Since T2ONIC began being delivered in the community in 2013, we have had 619 referrals to attend the course. These have been a mixture of self-referrals and referrals from healthcare professionals. When contacted, 70 of these referrals were not interested or could not be reached. Of those offered a place, 384 people attended the course and 235 did not attend.

We collected clinical data prior to starting

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1. Clinical data were reviewed to see how many of those who had attended reduced their HbA_{1c} by 11 mmol/mol (1%). A level of 11 mmol/mol (1%) was used as this is shown to reduce risk of microvascular complications by 25% in people with type 2 diabetes.
2. In 2014, 123 out of 130 people who attended had pre- and post-course bloods completed and 27% of people reduced their HbA_{1c} by 11 mmol/mol (1%; 33 people).
3. Looking to the future, we would like to transcribe the course manual on to DVD, design and deliver a carbohydrate counting module to allow those on basal–bolus regimens to gain the most from the flexibility the insulin regimen can provide and hold annual T2ONIC update workshops, open to all previous participants.

the course and at the three-month follow up. Not everyone had clinical data collected at three months. This data was reviewed to see how many of those who had attended reduced their HbA_{1c} by 11 mmol/mol (1%). A level of 11 mmol/mol (1%) was used as this is shown to reduce risk of microvascular complications by 25% in people with type 2 diabetes (UK Prospective Diabetes Study Group, 1998).

In 2013, 94 out of 99 people who attended the course had pre- and post-course bloods completed and 35% of people reduced their HbA_{1c} by 11 mmol/mol (33 people).

In 2014, 123 out of 130 people who attended had pre- and post-course bloods completed and 27% of people reduced their HbA_{1c} by 11 mmol/mol (33 people).

Barriers to Change

When T2ONIC was developed there was little support to deliver this on a regular basis due to staffing issues with the DSNs, dietitian and administrators. There was no time allocated for designing or delivering T2ONIC and it relied on the goodwill of staff. As a result of this, progress was often slow and it was easy to become disheartened. However, the people who attended T2ONIC appeared to gain so much from the course that this provided continuing motivation for all involved.

People who have attended the course originally were those who were under the care of the Nottingham University Hospitals NHS Trust, but as more people heard about T2ONIC, GPs and practice nurses began to refer their patients from primary care. This led to the establishment of a referral pathway allowing direct referrals to T2ONIC. As a result the programme gained financial support. This allowed staff to have time allocated for the delivery of the course. More staff have been trained and the provision of administration time has helped enormously.

Observations

We welcome observers to the sessions and colleagues, including community staff such as practice nurses and GPs, have all taken advantage of this. These observers have gained a valuable insight into how people cope with a

long-term condition and the difficulties they face. This, in turn, has helped the healthcare professionals to ask appropriate questions of their patients and tailor their consultations to meet the needs of each individual.

Benefits to facilitators

As facilitators of T2ONIC, we have gained insight into how people cope with managing their diabetes, often with very little understanding of this condition, implications of lifestyle and their prescribed treatments. Many also have perceived ideas that it is only the healthcare professionals that can alter their insulin doses and it surprises them when they are encouraged to do this for themselves and take ownership.

Opportunities

The opportunity arose to bid for the tender to provide a structured education programme for people with diabetes who are treated with insulin. We were successful in winning the bid and are now at the end of our second year of rolling out T2ONIC to people within Nottingham City. We have adapted T2ONIC so that the resources are portable. We are holding the sessions in local community centres that are quality assured to ensure the venue is suitable for adult education and is accessible to all.

Future developments

The completed evaluation forms help us to review and develop T2ONIC. We are continually updating resources and visual aids. Looking to the future, we would like to:

- Transcribe the course manual on to DVD.
- Design and deliver a carbohydrate counting module to allow those on basal–bolus regimens to gain the most from the flexibility the insulin regimen can provide.
- Hold annual T2ONIC update workshops, open to all previous participants.

Conclusion

T2ONIC was developed to reach a group of people who previously had no tailored structured education programme specifically designed for them. T2ONIC is meeting the needs of those

people who have attended and has been well received.

The next step is to consider how we can reach and engage with the 40% of people who were invited but did not attend. We recognise that group education is not for everyone and perhaps the development of the DVD for the course will be useful within this patient group.

The facilitators have all enjoyed delivering the course and enjoy the challenges that each provides. So far, the course has been delivered to a wide range of people who have type 2 diabetes and are on insulin, including those who do not speak English, have hearing and visual impairments and those who need support from their relatives or carers. The provision of administration support has been essential for ensuring the continuing success of the programme. With financial support, we are continuing to run T2ONIC and hope to develop the programme further. ■

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