



# Complementary therapies and diabetes

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## KEYWORDS

Diabetes;  
Herbs;  
Aromatherapy;  
Advice

**Summary** There is increasing recognition that people with diabetes use a range of complementary therapies (CT), for a number of conditions, but do not always inform their conventional health practitioners about their use. Controlling blood glucose levels in people with diabetes is important to reduce the consequent metabolic abnormalities and symptoms and the incidence of long-term complications. Conventional medical and nursing practitioners often incorrectly assume that they are used to control blood glucose levels, e.g. using herbal medicines to increase insulin production or reduce insulin resistance. CT can be beneficial for people with diabetes. They can also lead to adverse events. This paper describes the outcome of monitoring complementary therapy use in our diabetic outpatient services in 2001, the results of a focus group ( $n = 10$ ) to explore issues identified in the monitoring process and a survey undertaken with a convenience sample of diabetes educators ( $n = 40$ ).

Twenty percent of patients used CT and there were three adverse events in the monitoring phase. Eight of the 10 focus group participants used CT and 16 of the diabetes educators used CT in patient care. Only one had a complementary therapy qualification.

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## Introduction

Diabetes is a chronic, incurable disease caused by lack of insulin, Type 1, or insulin resistance, Type 2. Both types are associated with short- and long-term complications that affect the individual's quality of life and often engender fear and powerlessness and can compromise physical and psychological functioning. Since the publication of the findings of the Diabetes Control and Complications Trial in 1993<sup>1</sup> and the United Kingdom Prospective Diabetes Study in 1998,<sup>2</sup> which demonstrated that good blood glucose control reduced long-term complications, the emphasis in diabetes management has been on

achieving good metabolic control. However, achieving good control can be difficult for many individuals because the delicate hormonal balance that controls glucose homeostasis is disrupted by the disease, before diagnosis and is easily upset by physical and psychological stress after diagnosis even if the person is on diabetes treatment. In addition, Type 2 diabetes is a 'silent' disease, that is, the disease and its complications often occur without obvious signs and symptoms, which makes it difficult for people to accept the diagnosis.

Complications such as eye and cardiovascular disease are frequently present at diagnosis. Conventional medicine has effective ways to control blood glucose but requires significant self-care on the part of the individual. It is the natural course of Type 2 diabetes for the majority of individuals to eventually require insulin, even if they are initially commenced on diet or oral hypoglycaemic agents.

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Because of the potential threat to quality of life and the chronic nature of diabetes many people turn to complementary therapies (CT) to assist them to cope and control the disease. That they do so, is not unexpected since many people with chronic diseases utilise CT.<sup>3-5</sup> In fact, it could be said that we are witnessing the evolution of a new health paradigm where the current reweaving of healing traditions and the interaction of conventional and CT is an attempt to address the health problems of our time. Not so long ago, the two approaches appeared to be distinct, but over the past 5 years there has been a growing acceptance of some CT by conventional practitioners and many incorporate CTs into their practices, refer to CTs or work with complementary therapists in shared health facilities. Research into CT in conventional health settings and universities is also occurring and supports the dynamic and forward thinking nature of the Cochrane Collaboration that defined CT as: 'Therapeutic and diagnostic disciplines outside conventional medical practice'.<sup>6</sup>

The definition goes on to point out that the boundaries within and between complementary and conventional therapies is not always sharp or fixed. In fact, many of the current boundary changes are occurring in response to the global increase in the use of CTs by the general public, including health professionals, who use them for their personal health care. A number of studies have shown that the types of people most likely to use CT are:

- In poor health.
- Have a chronic disease such as diabetes.
- Well educated women who are financially well off.
- Interested in self-care and want to be involved in their health care.
- Culturally and/or philosophically attuned to CT.
- People who have experienced a traumatic life event. The diagnosis of diabetes is viewed by some people as a traumatic experience because of the associated complications, its incurable nature and the need for lifelong self-care and coping.<sup>7</sup>

However, the pathway to complementary care is complex and nonlinear.<sup>8</sup> People base their health choices on their existing knowledge, beliefs, previous experiences and the advice of significant others, including health professionals. The time of diagnosis is a stressful period and the information received prior to diagnosis influences the person's perceptions of the disease, which in turn affects self-care and recovery.<sup>9</sup> People frequently use more than one CT and combine CT with conven-

tional therapies. This means that, in many cases, people self-diagnose and self-treat and may, therefore, delay seeking appropriate, timely advice and management. Some people become disenchanted with conventional medicine or conventional health practitioners and seek alternative sources of care that are congruent with their health and philosophies.

## Complementary therapy philosophy

Complementary therapy philosophy focuses on the individual and achieving balance and harmony to assist the body to heal itself<sup>8</sup> and considers the patient to be an active participant in their care, which is congruent with current diabetes education care models that focus on patient empowerment and patient-centred care, where the individual's health goals, rather than the health professional's goals, are given priority.<sup>10</sup> Many complementary therapists see illness as both a threat and an opportunity. This disease duality is also true of diabetes, especially Type 2 diabetes, where lifestyle changes can result in better diabetes balance and improved health (the opportunity), and delay the need for medications and complications (the threat).

## How frequently do people with diabetes use CT?

Studies that examine complementary therapy usage rates by people with diabetes are relatively recent and often have a negative tone towards CT. Leese et al.<sup>11</sup> surveyed people with diabetes attending a diabetic outpatient clinic in the UK and found 17% were using CT. A similar survey in Canada found 25% of people with diabetes used CT.<sup>12</sup> More recently, a nation-wide survey in the USA found people with diabetes were 1.6 times more likely to use CT than nondiabetics, but the pattern of use was similar in both groups.<sup>13</sup> The main therapies used were nutritional and spiritual therapies, herbs, massage and meditation. Older people with a good income were the group most likely to use CT in Egede's survey.

Contrary to the popular belief that people who use CT do not discuss its use with their doctors, 57% reported discussing their CT use with their doctors and 43% were referred by doctors, to a complementary therapist. These figures could reflect the growing knowledge about, and acceptance of, CT by conventional practitioners and willingness to

collaborative with complementary therapy practitioners. Alternatively, it might indicate that people are taking responsibility for their health, demanding a say in their care and finding and trying options. It also reflects the fact that health professionals are dealing with an increasingly well-informed public.

Complementary therapy usage was monitored in our diabetic outpatient service during 2001. The results indicate that >25% used CT. At the same time, adverse events associated with complementary therapy use were monitored. Only three were recorded:

- Hypoglycaemia from combining a traditional Chinese herbal preparation with oral hypoglycaemia agents.<sup>14</sup>
- Hyperglycaemia following the initiation of Spirulina, largely due to the preparation containing iodine that changed the man's thyroid function and led to hyperglycaemia. The hyperglycaemia resolved when the Spirulina was stopped.
- Infected foot burns requiring hospitalisation and intravenous antibiotics from taking hot baths following a media release stating that hot baths could lower blood glucose levels.

Our clinic is situated in an inner city university teaching hospital with a large population of non-English-speaking patients, many have little formal schooling and few have higher education qualifications. Although there are policies for using CT in the hospital it is not actively encouraged. Vapourising essential oils occurs in many clinical areas but it is not used with any defined clinical intent and outcomes are not monitored. The physiotherapy department organises Feldenkrais training sessions each year and some nurses have CT qualifications, particularly in aromatherapy, massage and kinesiology.

A number of adverse events in people with diabetes associated with using CT have been recorded in the literature. They include:

- Stopping insulin in a person with Type 1 diabetes leading to ketoacidosis and admission to hospital.<sup>15</sup>
- Hypoglycaemia from contaminated herbal medications.<sup>16</sup>
- Trauma and burns from moxibustion and cupping to insensitive neuropathic legs.<sup>17</sup>
- Bruising from an aromatherapy massage in a patient on anticoagulant therapy. The man's wife gave the massage. It is not known if the essential oils were responsible for the bruising or whether the pressure from the massage caused

it. Alternatively, it may have been a coincidental finding.

These adverse events raise questions about the knowledge of people with diabetes, and the health professionals who care for them, about the safe use of CT and the safety and efficiency of using CT in the management of people with diabetes.

A number of benefits for people with diabetes from using CT have also been reported. These include improved blood glucose control in children receiving regular massage and reduced stress in their parents<sup>18</sup> and improving self-esteem, acceptance of diabetes and learning and information recall.<sup>19</sup>

## Aims of the study

With that background a study was designed that aimed to:

- Explore the reasons why people with diabetes attending our outpatient clinics use CT.
- Determine the type of therapies they are most likely to use.
- Use the information obtained to develop advice for people with diabetes and health professionals about the safe use of CT.

## Methods

Two groups were surveyed. A focus group of patients to enable the issues that emerged in the 12 months monitoring program to be explored and described, and a self-complete anonymous questionnaire was administered to a convenience sample of diabetes educators.

### Focus group

The focus group consisted of people with diabetes recruited by placing advertisements in the Diabetes Centre and Diabetes Outpatient Clinics. The researcher guided the focus group the discussion, and the researcher and two independent observers recorded the discussion. The discussion was not taped because previous experience of focus groups in the same population found that the tape recorder inhibited discussion. The three transcripts were analysed separately to identify the emerging themes. The three analyses were compared and 86% congruence was obtained.

## Survey of diabetes educators

A group of diabetes educators attending a professional development seminar about a new diabetes product were invited to complete an anonymous questionnaire, 38 of the 40 attendees participated. A combination of fixed and open questions was used. The questionnaires were not formally validated prior to the study but a panel of experts established face and content validity.

## Results

### Focus group (n=10)

Seven women and three men participated, their ages ranged from 28 to 62 years, mean 57 years. Eight of the 10 regularly used CT to reduce stress and improve their mood, in skin care, including foot care, general well-being, analgesia and nondiabetes-related reasons such as arthritis and beauty care. Only one was using a complementary therapy, Chinese herbs, to control blood glucose. All participants were satisfied with the therapies they were using, did not believe there were any unwanted interactions with their conventional medicines and intended to continue using the CT. The therapies they used are shown in [Table 1](#).

None of the participants had stopped, or altered, their conventional medications. All participants had informed their complementary therapists that they had diabetes and the medications they were taking. Only one told their conventional carers they were using CT. All eight believed they consulted reputable, appropriately qualified complementary therapists. The ways these therapists were identified are shown in [Table 2](#).

### Diabetes educator survey (n = 38)

Sixteen of the 38 respondents stated that they used CT in the management of their patients with

**Table 1** CT used by people with diabetes attending the diabetic outpatient clinic January–December 2001, shown in alphabetical order.

Aromatherapy and/or massage
Herbal medicines
Massage
Meditation
Naturopathy
Nutritional therapies and supplements
Traditional Chinese medicine

**Table 2** How complementary therapists were identified.

Recommendation of a friend—6
Advertisement in a magazine—1
Professional practitioner list in complementary therapy journals—1
Complementary therapy consumer organisation—1
Telephoning a complementary therapy college for a recommendation—1

diabetes and 27 used CT personally. Only one respondent had a complementary therapy qualification (at certificate level), a further four had attended short complementary therapy workshops or seminars. The diabetes educators used CT for themselves to reduce stress and in beauty care and one to manage chronic back pain.

They used the therapies in patient care to manage stress, relieve pain and improve well-being. The effectiveness of CT to achieve these goals was not monitored, but five respondents cited reductions in HbA1c, representing improved blood glucose control, and reduced doses of diabetic medications as a result of their patients using CT. No adverse events associated with using CT for themselves or in patient care were reported.

## Discussion

The range of therapies used by our patients and the diabetes educators was similar to other studies. Interestingly, only one patient used CT with a primary aim of reducing their blood glucose levels. This lady used an herb that has some evidence to support its blood glucose lowering reduction effect. However, stress reduction, pain management and improved well-being reported by other patients all have secondary benefits for blood glucose control by reducing the counter regulatory hormone response and reducing insulin resistance.

The high level of use of CT for reasons other than blood glucose control, clearly shows the importance of establishing why people with diabetes use CT when deciding if they are effective and whether management goals have been met. Many diabetes health professionals assume, that because the person has diabetes and chooses to use a complementary therapy, it must be to control blood glucose. This was clearly not the case for the majority of our subjects and highlights the importance of considering well-being and quality of life as well as metabolic parameters when developing health plans for people with diabetes.

Patients used a range of strategies to identify appropriate complementary therapists. The majority of methods used had an element of 'recommendation' by a significant person or authority. This finding highlights the importance of significant others and authority figures in patients' decision-making processes and health behaviours, and the need for health professionals to be aware of the impact of their beliefs and attitudes on the beliefs and attitudes of their patients. In particular, health professionals should only offer advice about CT when they have the knowledge and competence to do so, as they would with any other area of practice.

It is a concern that only one of the 16 diabetes educators who used CT in patient care had a qualification and four considered that a short-course seminar, or workshop gave them sufficient knowledge and skills to use CT therapeutically. There is a growing awareness of the need for adequate practitioner qualifications and competence, and of the complexity of most CT. Complementary therapy modules and short courses are increasingly being incorporated into undergraduate nursing and medical training and a range of post-graduate forums are offered on a regular basis. They are not intended to prepare nurses and doctors to utilise particular CTs in practice and do not confer CT qualifications<sup>20</sup>.

It is interesting that all patients using CT in our study had informed their complementary therapists that they had diabetes and about their conventional care, but only one informed their conventional health professionals that they were using CT. Despite the wider acceptance of CT, many conventional health practitioners still view CT with scepticism and communicate these attitudes, either directly or indirectly to their patients. It is unlikely that patients would discuss complementary therapy use under these circumstances. Similarly, not telling, may not be deliberate withholding of information, rather it may not seem relevant to some patients to tell their diabetes practitioners about their CT use, especially if they are not using them for their diabetes management. It is not yet standard practice to ask about complementary therapy use in routine history and assessment.

Conventional practitioners need to be sensitive to the cultural, philosophical and health choices of individuals, respect their choices and recognise that complementary therapy use often indicates a motivated person interested in their health care. The focus of any care plan should be on what works safely and effectively to achieve diabetes balance. Taking pressure off the need for 'control' and placing the emphasis on 'balance' might be more

effective and many CT can help achieve that balance.

Clinical parameters and diabetes management control were not measured as part of this study, however, the diabetes educators reported improved metabolic control in people using CT. It is not possible to say with certainty that the improvement was a result of using CT, particularly as outcomes were not monitored and the treatment effects reported were different from the participant's stated reasons for using CT.

No adverse events such as those outlined in the introduction were observed or reported by either the patient or the diabetes educator study groups. However, the potential for adverse events to occur was present in the person using Chinese herbs, especially if they were also taking oral hypoglycaemic agents or insulin, and in the use of CT by untrained health professionals. The need to adjust conventional medications and/or CT could arise if blood glucose levels improve. The lack of objective outcome monitoring reduces the value of these reported improvements in metabolic control.

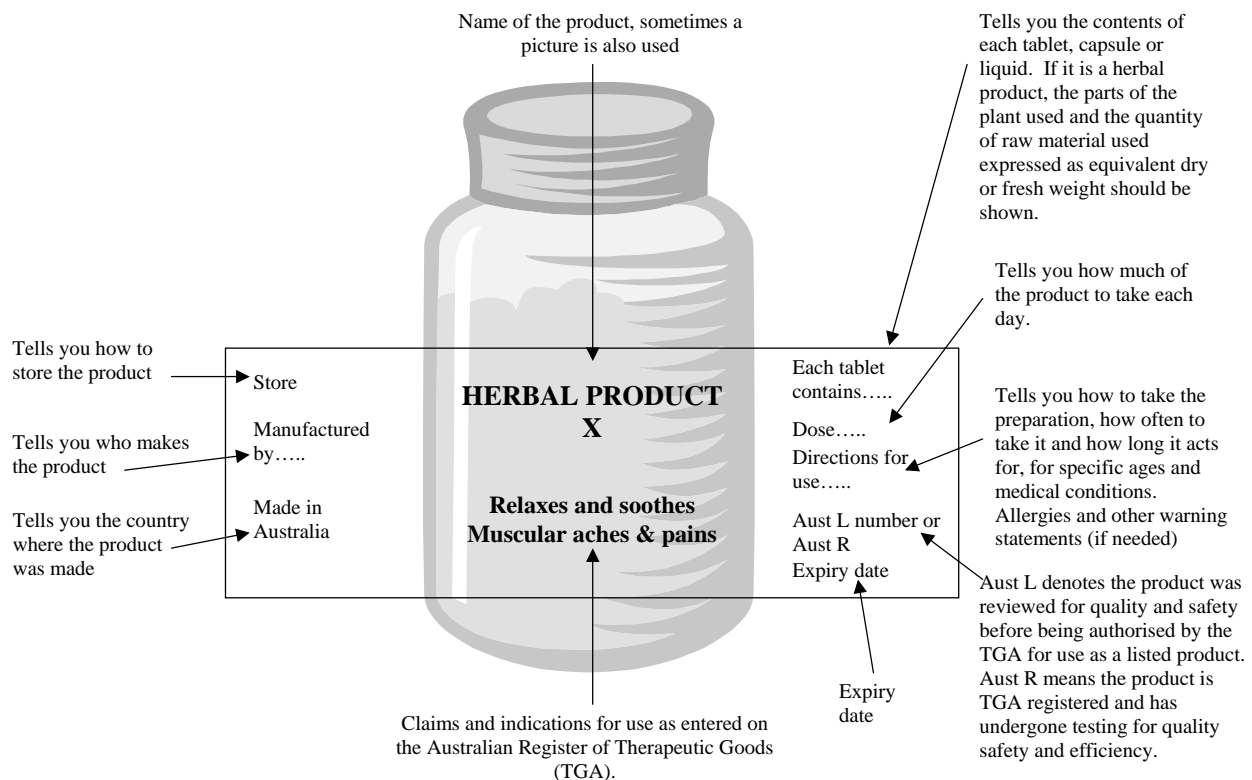
The time of diagnosis of diabetes is stressful. CT can be used to reduce stress and help the person accept diabetes fit it into the framework of their lives. Reducing stress has secondary benefits for metabolic control. Improved self-esteem, well-being and quality of life are important management considerations where CT can have a role. Some therapies, especially herbal medicines, directly reduce blood glucose and blood fats and therapies, such as aromatherapy, can be used in education and counselling to help the individual link new information into their existing knowledge base (classical conditioning).

## Limitations of the study

Both the focus group and the diabetes educator group represent only a small proportion of the respective sampling populations and their views may not be representative of other patients or diabetes educators. Therefore, care should be taken when generalising the results to other populations. People in the focus group may have self-selected into the group on the basis that they were using CT, and their views, as expressed in the focus group may not represent the views of other patients attending the diabetes service. However, since the aim was to explore the reasons people use CT and the types of therapies they are likely to use, not to make generalisations, self-selection was seen as a benefit of the study.

**Table 3** Suggested advice for patients about the safe use of complementary therapies.

Decide on the health goals you want to achieve.  
 Select a therapy or therapies that is/are likely to achieve these goals.  
 Learn all there is about the therapies so you can use it from an informed perspective.  
 Consult reputable practitioners.  
 Buy products from reputable sources that are correctly labelled and stored.  
 Have a correct diagnosis before using any therapy.  
 Inform conventional and complementary practitioners that you see for health care about all the therapies you are using.  
 Monitor the effects against the health goals you set. Consider the positive and negative effects and discuss them with your complementary and conventional practitioners.  
 Be aware that some complementary therapies may take some time before any effect is noticed.  
 Some complementary therapies, e.g. essential oils should not be used continuously for long periods.  
 Complementary therapy doses, e.g. herbal medicines, may need to be adjusted for surgery, illness, investigations, changes in conventional therapy.

**Fig. 1** Basic information that should be on herbal and aromatherapy products, based on Kron, 2002.<sup>21</sup>

## Conclusions and implications for diabetes care

The people with diabetes in our study used a range of complementary therapies (CT) for a number of reasons, primarily to manage stress, the unpleasant symptoms of diabetes and/or concomitant diseases and skin care. They believed CT confer health benefits and improved their quality of life. Most did

not disclose complementary therapy use to their conventional carers.

The patient's desired outcomes for complementary therapy use, differed from their outcomes assumed by health professionals, and patients perceive the benefits of CT differently from health professionals. They used a range of therapies and did not cease their conventional treatment, which means they often used complementary and conventional therapies together. The combination can

result in unwanted side effects if both therapies are not monitored and the person is not given appropriate advice about all their treatment options so they can make informed decisions about the therapies they use.

The combination of complementary and conventional therapies or of different CT can also mean that reduced doses of conventional medicines can be used. In addition, CT can confer health benefits that lead to improved metabolic control either, as a direct effect of the therapy or as a secondary benefit through effective stress management. [Table 3](#) suggests some advice about CT use that can be given to people with diabetes and [Fig. 1](#) is an example of important information that should be included on a complementary therapy product label that could be given to patients. Finally, I say we ought not to reject the ancient art as if it were, and had not been properly founded, since it did not attain accuracy in all things, but rather revive it and admire its discoveries.

Hippocrates, *On Ancient Medicine*

## References

1. Diabetes Control and Complications Trial Research Group. The effect of intensive insulin treatment of diabetes on the development, progression of long term complications in insulin dependent diabetes mellitus. *N Engl J Med* 1993;329: 977–86.
2. United Kingdom Prospective Diabetes Study (UKPDS). Glycaemia. *Lancet* 1998;352:837–53.
3. Lloyd P, Lupton D, Wiesner D, Hasleton S. Choosing alternative therapy: an Australian study of sociodemographic characteristics and motives of patients resident in Sydney. *Australas J Public Health* 1993;7(2):135–44.
4. MacLennan A, Wilson P, Taylor A. Prevalence and cost of alternative medicines in Australia. *Lancet* 1996;347:569–73.
5. Hunter A. Why do people see natural therapists? A review of the surveys. *Diversity* 1997;10:15–9.
6. Cochrane Collaboration. *Complementary therapy health field*, 1993.
7. Dunning P, Martin M. Using a focus group to explore perceptions of diabetic severity. *Pract Diabetes Int* 1997;14(7):185–8.
8. Vincent C, Furnham A. *Complementary medicine—a research approach*. New York: Wiley, 1997.
9. Descombe M. Personal health and the social psychology of risk taking. *Health Educ Res* 1993;8(4):505–17.
10. Anderson R, Funnell M, Arnold M. Using the empowerment approach to help patients change behaviour. In: Anderson B, Rubin R, editors. *Practical psychology for clinicians*. Alexandria: American Diabetes Association, 1996. p. 163–72.
11. Leese G, Gill G, Houghton G. Prevalence of complementary medicine usage within a diabetic clinic. *Pract Diabetes Int* 1997;14(7):207–8.
12. Ryan E, Pick M, Marceau C. Use of alternative therapies in diabetes mellitus. *Proceedings of the American Diabetes Association Conference*, San Diego, USA, 1999.
13. Egede L, Xiaobou Y, Zheng D, Silverstein M. The prevalence and pattern of complementary and alternative medicine use in individuals with diabetes. *Diabetes Care* 2002;25:324–9.
14. Dunning T, Chan S, Pendek R, Motid M, Ward G. A cautionary tale of the use of complementary therapies. *Diabetes Primary Care* 2001;3(2):59–63.
15. Gill G, Redmond S, Garratt F, Paisley R. Diabetes and alternative medicine: cause for concern. *Diabetic Med* 1994;11:210–3.
16. Goudie A, Kayes. Contaminated medication precipitating hypoglycaemia. *Med J Aust* 2001;175:256–57.
17. Ewins D, Bakker K, Youn M, Boulton A. Alternative medicine: potential dangers for the diabetic foot. *Diabetic Med* 1993;10:988–92.
18. Field T, Hernandez-reif M, La Greca A, Shaw K, Schenberg K, Kuhn C. Massage therapy lowers blood glucose levels in children with diabetes. *Diabetes Spectrum* 1997;10:237–9.
19. Dunning T. Complementary therapies. *Diabetes Voice* 2002;14(2):10–3.
20. Hunter A. Natural therapies training—how good is it? *Diversity* 2002;2(7):40–7.
21. Kron J. Herbalism. *Complementary Med* 2002;1(2):27–31.

### Leisure by William Henry Davies (1871-1940)

What is this life if, full of care,  
We have no time to stand and stare.

No time to stand beneath the boughs  
And stare as long as sheep or cows.

No time to see, when woods we pass,  
Where squirrels hide their nuts in grass.

No time to see, in broad daylight,  
Streams full of stars, like skies at night.

No time to turn at Beauty's glance,  
And watch her feet, how they can dance.

No time to wait 'til her mouth can  
Enrich that smile her eyes began.

A poor life this if, full of care,  
We have no time to stand and stare.