Supplementary Information for Woods et al. (2023)

Table of Contents

List of Tables

1. Basic details for individual retreats

Table S1

Basic Details for Individual Retreats

Retreat	Practice	Teacher	Date	Total days[a]	Residential/ non-residential
A	Shamatha	A	2018	7	Non-residential
B	Shamatha	B	2018	10	Both[b]
C	Shamatha	B	2019	5	Both[b]
D	Thai Forest	C	2018	9	Residential
E	Thai Forest	C	2019	9	Residential
F	Thai Forest	C	2019	9	Residential
G	Thai Forest	D	2019	7	Residential

Note. Some meditation sessions in the retreats were devoted to practices other than the target practice. In the questionnaire used in the study it was therefore emphasized that the relevant questions were about the target practice, not the other techniques.

[a] Most participants attended for the full retreat, but some attended for only part of it.

[b] Retreatants could choose between the residential and non-residential options.

2. Practice history questions and response options

Table S2

Practice History Questions and Response Options

Question	Response options
How long have you been practising some form of meditation?	Participants were asked to enter years, months, and weeks. They were told to leave out any gaps in their practice of a month or more

Typically how often do you practise?[a]	Participants were asked to answer the question in two ways:
	• By selecting one of the following options:
	  ○ Daily (5-7 days per week);
	  ○ Weekly (2-4 days per week);
	  ○ Monthly (1-4 times per month);
	  ○ Periodically (3-4 times per year);
	  ○ Sporadically (now and then with no pattern); and
	• By entering days per week, days per month, and months per year

How many sessions do you typically do on days that you practise?[b]	Participants were asked to enter a number
What is the typical length of a meditation session?[b]	Participants were given the following options: • 5-15 minutes; • 16-30 minutes; • 31-60 minutes; • More than an hour
Approximately how many retreats have you done where you practised intensively for a day or several days?	Participants were asked to enter a number
In total, approximately how many days have you spent on those retreats?	Participants were asked to enter a number
How long have you practised mindfulness meditation (retreat participants) / Stillness Meditation (Stillness Meditation participants)?[c]	Participants were asked to enter years, months, and weeks. They were told to leave out any gaps in their practice of a month or more
Have you taught mindfulness meditation (retreat participants) / Stillness Meditation (Stillness Meditation participants) in the past two years?[c]	Participants were given the options Yes and No

Stillness Meditation participants only: For the Stillness Meditation classes that you attended as a client/student in the past 6 weeks, which option best describes how frequently you attended?	Participants were given the following options: • Less than one class per fortnight; • One class per fortnight; • One class per week • Two classes per week; • Three classes per week

Note. [a] Participants were asked to answer this question with respect to their non-retreat practice. [b] Retreat participants were asked to answer this question with respect to days they were not on retreat, and Stillness Meditation participants were asked to answer it with respect to days they did not have a class. [c] Retreat participants were told that, "The practices on the retreat included forms of mindfulness meditation. Mindfulness meditation describes a broad range of practices that involve learning to pay attention to a particular meditation object or objects (e.g., the breath, thoughts/feelings, body sensations, etc.)".

3. Presence/absence of content based on traditional texts

Table S3 lists the 48 dimensional items. Based on the traditional texts, it specifies for each item the practices in which that item is a feature of the goal-state/s. The authors of the traditional texts are referred to in the table as meditation "experts". For Shamatha and Stillness Meditation, the assessment as to whether the experts report/imply that an item is present or absent is based on Tables S1 and S3 in Woods et al. (2020), and the analysis of those tables in Woods et al. (2022a). Tables S1 and S3 in Woods et al. (2020) contain statements systematically extracted from traditional texts relating to the two practices respectively. Full details of those traditional texts are provided in Supplementary Appendix F to Woods et al. (2020). For Thai Forest, the assessment regarding the expert descriptions is based on Brahm (2014). Since the analysis in Woods et al. (2022a) does not extend to Thai Forest, more detail has been provided about Thai Forest in Table S3 below than for the other two practices.

According to the traditional texts, the practices differ in terms of whether there is a single goal-state or multiple goal-states. The Shamatha goal-state is generally presented as a single state or experience. In Thai Forest, there is a range of goal-states. First there is the contentless experience that immediately follows the disappearance of the meditation object (the breath). If the meditator is able to "let go" sufficiently, they will then progress through what are known as the four *jhanas* and the four *immaterial attainments*. For the purposes of Table S3, we treat the goal-states in Thai Forest as ranging up to and including the second immaterial attainment, as Brahm (2014) indicates that in the third immaterial attainment the meditator is not even aware of being conscious. Each of the Thai Forest goal-states has different subjective qualities, for example different types of stillness, peace, and/or bliss. In Stillness Meditation there is also a range of goal-states. The experts do not divide them into discrete stages as is done in Thai Forest, but a basic understanding is that as the meditator progresses the experience becomes simpler, deeper, and more profound.

Table S3

Presence/Absence of Content Based on Traditional Texts

No.	Dimensional item	In which practices do the experts report/imply that the item is a feature of the goal-state/s?
1	Thoughts	In all three practices the experts report/imply that in the goal-state/s there are no thoughts.
2	Emotions	In all three practices the experts report/imply that most or all emotions typically experienced in everyday life are absent in the goal-state/s. In the goal-states meditators may experience a limited range of feelings such as calm and bliss/joy/happiness (see the items below), but those feelings have a quality or intensity that is not normally experienced in daily life.
3	Images	In all three practices the experts report/imply that in the goal-state/s there are no images. The Thai Forest expert says that at stage 6 of the practice ("experiencing the beautiful nimitta"), meditators experience only a "mental sign" (Brahm, 2014, p. 21) known as a nimitta. According to the expert, this is a "pure mental object" (p. 22), as distinct from a sensory/visual object, but upon emerging from the goal-state/s it is common for the mind to incorrectly interpret the object as light. The expert explains that: "[P]ure mental phenomena are so rarely visited that perception has great difficulty finding anything at all comparable to these new experiences ... [Upon emerging from the goal-state/s] [p]erception adopts this close but imperfect comparison and interprets the nimittas as lights" (p. 137). During the goal-state/s the nimitta is said to be known/ perceived by the "mind sense" (p. 137), rather than the visual/sight sense or consciousness. By this stage of practice the latter is said to have "long been turned off" (p. 21). If meditators can let go sufficiently, it is said that they sink or dive into the nimitta or that the nimitta explodes.
4	Memories	In all three practices the experts report/imply that during the goal-state/s no memories come to mind.
5	Things around you	In Shamatha and Thai Forest the experts report/imply that in the goal-state/s meditators have no awareness of things around them. In Stillness Meditation the experts report/imply that meditators have no or only very dull awareness of things around them.
6	Body	In Shamatha and Thai Forest the experts report/imply that in the goal-states meditators have no awareness of their body. In Stillness Meditation the experts report/imply that meditators have no or only very dull awareness of their body.
7	Breath	In all three practices the experts report/imply that in the goal-state/s meditators have no awareness of the breath.
8	Mental activity	In all three practices the experts report/imply that in the goal-state/s there is little or no mental activity.
9	Awareness that I am having the experience	In all three practices the experts report/imply that meditators only become aware that they have experienced the goal-state/s once they emerge from them.
10	Stillness	All three practices.
11	Silence	All three practices.
12	Wakefulness	All three practices.
13	Drowsiness	In all three practices the experts report/imply that in the goal-state/s there is no drowsiness.
14	Clearness	All three practices.
15	Purity	All three practices.
16	Simplicity	All three practices.
17	Naturalness	All three practices.
18	Calmness	All three practices.
19	Peacefulness	All three practices.

20	Ease	All three practices.
21	Restfulness	All three practices
22	Mental relaxation	All three practices.
23	Bliss	In Shamatha and Thai Forest, the experts clearly report that bliss is a feature of the goal-states. In Shamatha the bliss is said to be subtle rather than intense. In Thai Forest the bliss at stage 5 ("full sustained attention on the beautiful breath") is referred to as "subtle happiness and joy" (Brahm, 2014, p. 90), whereas the bliss on the cusp of the first jhana is described as "greater joy than one can ever imagine" (p. 151). Bliss is said to increase up to the fourth jhana. In the third jhana the bliss is said to be caused by the letting go of joy, leaving only happiness. The bliss of the fourth jhana is said to be caused by letting go of happiness as well. Brahm explains that in the fourth jhana "all that is left is ... profound peace" (p. 163), and that even though joy and happiness have vanished, the experience is later recalled as "the best bliss so far" (p. 164). Brahm refers to the bliss of the fourth jhana as "the bliss of no more bliss" (p. 164). In Stillness Meditation the experts at times explicitly state that bliss is not a feature of the goal-states, but in these passages they seem to have in mind intense forms of bliss. If, for example, bliss is equated to a subtle form of joy, it appears that it is a feature of at least some of the Stillness Meditation goal-states. The Stillness Meditation experts report/imply that deeper goal-states are in some sense beyond bliss, joy and happiness.
24	Joy	All three practices (see further item 23, "Bliss"). In Thai Forest, joy is said to be present in the goal-states up to and including the second jhana, but absent in the goal-states from the third jhana onwards (see item 23, "Bliss").
25	Happiness	The Shamatha expert refers to the bliss of the goal-states as joy and happiness. In Thai Forest, happiness is said to be present in the goal-states up to and including the third jhana, but absent in the goal-states from the fourth jhana onwards (see item 23, "Bliss"). The Stillness Meditation experts tend not to use the word happiness in describing the goal-states, but they do use the word joy (see item 24, "Joy"). If happiness is equated with joy, it appears that happiness is a feature of at least some of the Stillness Meditation goal-states (see further item 23, "Bliss").
26	Relinquishing control	All three practices.
27	Non-doing	All three practices.
28	Pure being with a complete absence of doing	All three practices. In Stillness Meditation, the experts refer to "pure being" (Meares, 1986, p. 153), "the act of just being in all its simplicity and naturalness with nothing added at all" (p. 27), and "*being* not *doing*" (McKinnon, 1991, p. 74). The Shamatha and Thai Forest experts tend not to use the term "pure being", but they convey the same quality (or one that seems very similar) using other words. The Shamatha expert says, for example, "You are *being* aware of being aware, but you are not really *doing* anything" (Wallace, 2006, pp. 136–137).[1] The Thai Forest expert explains that doing almost completely disappears at stage 5 ("full sustained attention on the beautiful breath") and says that in the second jhana "'being' is without any 'doing'" (Brahm, 2014, p. 161).
29	Effort	In all three practices the experts report/imply that the goal-states involve no effort.
30	Losing normal ego/self via absorption	All three practices.
31	Reaching a ground state of the mind	All three practices. The Thai Forest expert states that by the time the meditator reaches the second jhana they have given up all *doing*, and have therefore become "just a knower, passively observing" (Brahm, 2014, p. 19).

[1] The expert makes this comment with respect to the Shamatha "awareness of awareness" practice at stage 8 ("Single-pointed attention"). It is clear, however, that it also applies with respect to the goal-state (stage 10) as attained through any of the three Shamatha practices described by the expert.

		The expert indicates that the *knower* can also be described as the mind, consciousness, or "the ground of all being" (p. 194). These comments suggest that meditators may experience the jhanas and the first two immaterial attainments as ground states of the mind.
32	Essential nature of the mind	All three practices.
33	Essence of knowledge/ knowing	All three practices. As noted above, the Thai Forest expert states that upon reaching the second jhana the meditator has become "just a knower, passively observing" (Brahm, 2014, p. 19). He adds that, "The road from the fourth [jhana] to the fourth immaterial attainment is the cessation, almost, of the remaining activity of the mind called 'knowing'. And the last step is the cessation of the last vestige of knowing" (p. 172). That last step is referred to as *nibbana*, the cessation of all perception. It is presented as coming after the fourth immaterial attainment.
34	Spiritual aspect	All three practices.
35	Inner security	All three practices.
36	Inner freedom	All three practices.
37	Timelessness	All three practices.
38	Changed perception of time	All three practices.
39	Vivid	The Shamatha expert reports that in the goal-state there is perfect attentional vividness. The Thai Forest and Stillness Meditation experts tend not to use the term vividness, but they convey the experience of vividness using other language. The Thai Forest expert indicates that in the goal-states there is an extremely high degree of vividness. The Stillness Meditation experts indicate that there may be a high degree of vividness. A comparison of the experts' descriptions across the practices suggests vividness is greater in Shamatha and Thai Forest than in Stillness Meditation.
40	Deep	All three practices. The Shamatha expert generally presents the Shamatha goal-state as a single state that is very deep. They indicate that depth increases as meditators move through the interim-states towards the goal-state. In Thai Forest and Stillness Meditation the experts indicate that there is a range of goal-states, and that the goal-states deepen as meditators progress.
41	Profound	In all three practices the basic understanding conveyed by the experts is that the goal-states are experienced as profound. The Thai Forest expert clearly establishes that the jhanas are experienced as profound, but does not address whether the goal-states preceding the jhanas are always experienced that way. The Stillness Meditation experts give the impression that the deeper goal-states are experienced as profound, but it is not clear from their accounts whether each of the shallower goal-states also have that quality.
42	Positive	All three practices.
43	Negative	The Shamatha and Stillness Meditation experts imply that there is nothing negative about the goal-state/s. The Thai Forest expert notes that at stage 6 ("experiencing the beautiful nimitta") meditators may experience fear about the relinquishment of control that is required to move into the jhanas. The expert counsels that there is in fact nothing to fear, and indicates that any fear will subside if meditators are able to relinquish control. He says, "Trust the Dhamma, the Buddha's teachings, and let the [jhana] warmly embrace you in an effortless, bodiless, egoless, and blissful experience that will be the most profound of your life" (Brahm, 2014, p. 24). The expert implies that other than this possible transient fear there is nothing negative about the goal-states.
44	Good	All three practices.
45	Pleasant	All three practices.

46	Wonderful	All three practices.
47	Beyond words/ language	In all three practices the experts report/imply that the goal-state/s are beyond words/language to some degree.
48	Difficult to describe	All three practices.

4. Estimation of lifetime hours practice and related values

This resource includes three tables: Tables S4, S5 and S6. Table S4 explains how we estimated lifetime hours practising some form of meditation, and Table S5 explains how we estimated lifetime hours practising mindfulness/Stillness meditation (as applicable). A number of other variables were used to estimate the lifetime hours practice values. Tables S4 and S5 also describe those variables and how they were calculated or determined. The third table, Table S6, explains how we estimated hours of target practice in the target period.

The three tables each have two columns. The left hand column specifies the name of the relevant variable. The right hand column describes that variable, explains how it was calculated or determined, and provides any other comments relating to it.

Some text in the tables covers both columns, because it is more general in nature, rather than relating only to a specific variable. An example is text providing the aims of steps within the procedure, and text linking one set of steps to the next.

Variables with the prefix "RP" apply only for retreat participants. Those with the prefix "SM" apply only for Stillness Meditation participants.

In places we use the term "target retreat". That term applies only for retreat participants, and refers to the main retreat that the participant was asked about in the questionnaire (see Method section of the paper).

We also refer to the "data-cleaning rules". These are available at https://osf.io/kse3j/. Some variables referred to in this section 4 have the prefix "Mod". That prefix refers to the form of the variable modified in accordance with the data-cleaning rules.

The variables concerning hours of target practice in the target period (Table S6) were estimated for all participants. Other variables, such as lifetime hours practice and the second and third variables in Table S5, were not estimated for the 19 participants referred to under the heading "General" in the Results section of the paper.

The calculations in Tables S4 to S6 involve a number of assumptions, including that each participant's current regimen for non-retreat practice also applied for their past practice. As the calculations depend on participants' memory of their practice and on the various assumptions, they produce only rough or ballpark estimates. The estimates we calculated

were considered adequate for the purposes of the study, and a substantial improvement on the many studies that estimate participants' meditation experience without a structured approach (Goleman & Davidson, 2017, pp. 69–70; Hasenkamp & Barsalou, 2012, p. 11).

Table S4

Estimation of Lifetime Hours Practising Some Form of Meditation

Variable	Definition/Calculation/Comment
We calculated participants' lifetime hours practising some form of meditation based on estimates of: • Their lifetime hours retreat practise of some form of meditation; and • Their lifetime hours non-retreat practise of some form of meditation.	
Lifetime Hours Retreat Practise of Some Form of Meditation	
We reached the estimate of lifetime hours retreat practise of some form of meditation as follows.	
RPTargetRetreatHoursPracticePerDay	Estimated hours per day the retreat participant did the target practice at the target retreat For: • Teacher A participants = 0.67 hours • Teacher B 2018 retreat participants = 3 hours • Teacher B 2019 retreat participants = 6 hours • Teacher C and D participants = 5 hours The estimate for Teacher A participants was determined based on audio recordings from the Teacher A retreat. The estimates for Teacher B participants were based on personal communications (May 14 and 17, 2020) with Teacher B. The estimates for Teacher C and D participants (i.e., the Thai Forest participants) were based on a practice schedule those teachers made available to retreatants, and input provided by the fourth author (LB), a long-time practitioner of Thai Forest meditation.
RPTargetRetreatHoursPractice	Estimated total hours the retreat participant did the target practice at the target retreat = RPTargetRetreatHoursPracticePerDay × RPTargetRetreatDays
LifetimeHoursRetreatPracticeSomeForm	Estimated lifetime hours the participant has spent in retreat practise of some form of meditation For retreat participants: = RPTargetRetreatHoursPractice + 4(FinalDaysOnRetreats – RPTargetRetreatDays) For Stillness Meditation participants: = 4 × FinalDaysOnRetreats FinalDaysOnRetreats is the total days the participant has spent on meditation retreats, determined in accordance with the data-cleaning rules. The two equations above assume that at all retreats other than the target retreats, participants practised some form of meditation for 4 hours per day. Four hours was considered a reasonable estimate bearing in mind that: (a) We were aiming only for a broad approximation of lifetime hours; (b) It was not feasible for us to ask participants how many hours they spent practising at each retreat, and it would have been difficult for some participants to recall that information; (c) As shown by the target retreat hours (see above), hours per day can vary with each retreat, even within a single tradition; (d) Some retreats, like the Teacher A retreat, involve extended periods of teaching outside of formal meditation (e.g., Dharma/Dhamma talks); and (e) Some retreats involve even more hours of practice per day than at the target retreats. The equation for retreat participants does not take into account hours spent at the target retreat practising forms of meditation other than the target practice. The estimate is therefore conservative with respect to the hours practised at the target retreat.

Lifetime Hours Non-Retreat Practise of Some Form of Meditation

Non-retreat practice includes class and "home" practice. Class practice means practice that is at a class but not at a retreat. Home practice means practice outside of retreats and classes. It is most commonly undertaken at home, but it could also be done elsewhere.

Since all Stillness Meditation participants attended Stillness Meditation classes, for those participants we asked about classes specifically. For Stillness Meditation participants we can therefore distinguish between home practice and class practice.

As retreat participants were not necessarily attending meditation classes, for those participants we did not ask about classes specifically. For retreat participants we will therefore not distinguish between home and class practice.

We assumed that on days participants were on retreat they did not also do non-retreat practice.

We first estimated the months over which each participant practised some form of meditation but did not attend retreats (TotalMonthsNonRetreatPracticeSomeForm). We reached that estimate as follows.

TotalMonthsPracticeSomeForm	Estimated total months over which the participant has practised some form of meditation = ModSomeFormYears × 12 + ModSomeFormMonths + ModSomeFormWeeks/4.29 The ModSomeForm values are the participant's responses to the question about how long they had been practising some form of meditation.[2]
TotalMonthsRetreatPracticeSomeForm	Estimated months spent on meditation retreats = FinalDaysOnRetreats/30
TotalMonthsNonRetreatPracticeSomeForm	Estimated total months over which the participant has practised some form of meditation but did not attend retreats = TotalMonthsPracticeSomeForm – TotalMonthsRetreatPracticeSomeForm

Next we estimated the hours each participant spent doing non-retreat practice each month (HoursNonRetreatPracticePerMonth), assuming that they were not attending retreats in that period.

In the questionnaire, we asked participants about the frequency of their non-retreat practice, and the length and duration of their non-retreat meditation sessions.[3] The questions were phrased in the present tense (e.g., "Typically how often do you practise?") but in estimates below we have assumed that the responses also apply to past practice. For example, if the participant said they have practised for 10 years and practise 7 days per week, we will assume that they have been practising for 7 days per week over that full period.

ModLengthSessionsInMinutes	Estimated duration (in minutes) of a typical meditation session in non-retreat practice (retreat participants) or home practice (Stillness Meditation participants). In the questionnaire we asked participants about the typical length of a meditation session. For retreat participants we asked about sessions outside of retreats, and for Stillness Meditation participants we asked about sessions outside of classes. The response options were "5-15 minutes", "16-30 minutes", "31-60 minutes", and "More than an hour". In the dataset the respective response options were represented by the codes 1 to 4. The variable ModLengthOfSessions provides the coded responses. If ModLengthOfSessions equals 1, 2 or 3, we made ModLengthOfSessionsInMinutes the midpoint of the response range for the relevant ModLengthOfSessions category. For example, if ModLengthOfSessions equals 1 for a participant, that means we took the duration of a typical session to be 5-15 minutes. The midpoint of that range is 10 minutes, and we therefore made ModLengthOfSessionsInMinutes 10.

[2] In the data-cleaning rules this is referred to as TimePractised question 1.

[3] For Stillness Meditation participants the length and duration questions concern practice outside of classes. Since Stillness Meditation does not involve retreats, we interpreted responses to these questions as relating to home practice – i.e., practice outside of classes and retreats.

Accordingly:
If ModLengthOfSessions = 1, ModLengthOfSessionsInMinutes = 10.0
If ModLengthOfSessions = 2, ModLengthOfSessionsInMinutes = 23.0
If ModLengthOfSessions = 3, ModLengthOfSessionsInMinutes = 45.5

For a small number of participants, ModLengthOfSessions equals 4. That means we took the duration of a typical session to be "more than an hour". In those cases we assumed that a typical session went for 90 minutes.

So, if ModLengthOfSessions = 4, ModLengthOfSessionsInMinutes = 90.0

For retreat participants we then calculated values for the following two variables.

RPMinutesNonRetreatPracticePerDay — Estimated minutes per day the retreat participant spends in non-retreat practice on days they undertake that practice

= ModNumberOfSessions × ModLengthOfSessionsInMinutes

For retreat participants, ModNumberOfSessions is the typical number of non-retreat sessions that the participant undertakes on days that they do non-retreat practice.

HoursNonRetreatPracticePerMonth — Estimated hours per month the participant spends in non-retreat practice, assuming they were not attending retreats in this period

For retreat participants:[4]
= (RPMinutesNonRetreatPracticePerDay × FinalDaysPerMonth)/60

FinalDaysPerMonth is the estimated days per month on which the participant undertakes non-retreat practice, determined in accordance with the data-cleaning rules.

For Stillness Meditation participants, we broke non-retreat practice into class practice and home practice. So to calculate HoursNon RetreatPracticePerMonth we first worked out the hours of class practice per month and the hours of home practice per month.

The detailed procedure for Stillness Meditation participants was as follows.

First we estimated the participants' class practice per day and home practice per day.

Stillness Meditation classes go for around 50 minutes, and we assumed that Stillness Meditation participants only attend one class per day. On this basis, Stillness Meditation participants do about 50 minutes per day of class practice on days that they attend classes.

SMHomePracticeMinutesPerDay — Estimated minutes per day the Stillness Meditation participant spends in home practice on days they do that practice.

= ModNumberOfSessions × ModLengthOfSessionsInMinutes

For Stillness Meditation participants, ModNumberOfSessions is the typical number of home practice sessions that the participant undertakes on days that they do home practice.

Next we estimated the:
- Days per month the Stillness Meditation participants do classes; and
- Days per month they do home practice.

SMDaysClassPracticePerWeek — Estimated days per week the Stillness Meditation participant attends a class

In the questionnaire we asked participants how frequently they had attended classes in the past 6 weeks. The response options were "Less than one class per fortnight", "One class per fortnight", "One class per week", "Two classes per week", and "Three classes per week". If the participant responded "Less than one class per fortnight", we assumed that they had attended one class per month. In the dataset the respective response

[4] The equation for Stillness Meditation participants will be provided later in this resource.

	options were represented by the codes 1 to 5. The variable SMClassFrequency provides the coded responses. We converted those responses into classes per week as follows: If SMClassFrequency = 1, SMDaysClassPracticePerWeek = 1/4.29 = 0.23 If SMClassFrequency = 2, SMDaysClassPracticePerWeek = 0.50 If SMClassFrequency = 3, SMDaysClassPracticePerWeek = 1.00 If SMClassFrequency = 4, SMDaysClassPracticePerWeek = 2.00 If SMClassFrequency = 5, SMDaysClassPracticePerWeek = 3.00
SMDaysClassPracticePerMonth	Estimated days per month the Stillness Meditation participant attends a class = SMDaysClassPracticePerWeek × 4.29
SMDaysHomePracticePerMonth	Estimated days per month the Stillness Meditation participant does home practice = FinalDaysPerMonth – SMDaysClassPracticePerMonth As is evident from the equation, we assumed that on days Stillness Meditation participants do class practice they do not also do home practice. As noted above, FinalDaysPerMonth is the estimated days per month on which the participant undertakes non-retreat practice, determined in accordance with the data-cleaning rules.
CorSMDaysHomePracticePerMonth	SMDaysHomePracticePerMonth, with corrections for minor anomalies The minor anomalies were that for a small number of participants the equation for SMDaysHomePracticePerMonth produced values between zero and negative one. It does not make sense for SMDaysHomePracticePerMonth values to be less than zero. The negative values arise because participants sometimes took there to be 4 weeks in each month, whereas in our calculations we used the figure 4.29. Since the values were very close to zero, for the corrected form of the variable we made the values zero.

We then estimated the:
- Hours per month the Stillness Meditation participants spend in class practice; and
- Hours per month they spend in home practice.

SMHoursClassPracticePerMonth	Estimated hours per month the Stillness Meditation participant spends in class practice = (SMDaysClassPracticePerMonth × 50)/60 The figure 50 reflects that each class goes for around 50 minutes (see above).
SMHoursHomePracticePerMonth	Estimated hours per month the Stillness Meditation participant spends in home practice = (CorSMDaysHomePracticePerMonth × SMHomePracticeMinutesPerDay)/60

We could then calculate the HoursNonRetreatPracticePerMonth values for the Stillness Meditation participants.[5]

HoursNonRetreatPracticePerMonth	Estimated hours per month the participant spends in non-retreat practice For Stillness Meditation participants: = SMHoursClassPracticePerMonth + SMHoursHomePracticePerMonth

[5] See above for the calculation for retreat participants.

Having calculated HoursNonRetreatPracticePerMonth for retreat participants and Stillness Meditation participants, we then calculated for each of those participants the lifetime hours spent in non-retreat practice of some form of meditation.

LifetimeHoursNonRetreatPracticeSomeForm	Estimated lifetime hours the participant has spent in non-retreat practise of some form of meditation = TotalMonthsNonRetreatPracticeSomeForm × HoursNonRetreatPracticePerMonth

Lifetime Hours Practise of Some Form of Meditation	
We then calculated lifetime hours spent in practise of some form of meditation.	
LifetimeHoursPracticeSomeForm	Estimated lifetime hours the participant has spent in retreat or non-retreat practise of some form of meditation = LifetimeHoursRetreatPracticeSomeForm + LifetimeHoursNonRetreatPracticeSomeForm

Table S5

Estimation of Lifetime Hours Practising Mindfulness/Stillness Meditation (as Applicable)

Variable	Definition/Calculation/Comment
For retreat participants we estimated lifetime hours practise of mindfulness meditation, and for Stillness Meditation participants we estimated lifetime hours practise of Stillness Meditation. We calculated participants' lifetime hours practising mindfulness/Stillness meditation (as applicable) based on estimates of: • Their lifetime hours retreat practise of that form of meditation; and • Their lifetime hours non-retreat practise of that form of meditation.	
Lifetime Hours Retreat Practise of Mindfulness/Stillness Meditation (as Applicable)	
LifetimeHoursRetreatPractiseSpecificType	Estimated lifetime hours the participant has spent in retreat practise of mindfulness/ Stillness meditation (as applicable) For retreat participants we assumed that all retreats the participant had attended were mindfulness meditation retreats. So for retreat participants: LifetimeHoursRetreatPracticeSpecificType = LifetimeHoursRetreatPracticeSomeForm Stillness Meditation does not involve retreats. As such, none of the retreats that Stillness Meditation participants report having done will be Stillness Meditation retreats. So for Stillness Meditation participants: LifetimeHoursRetreatPracticeSpecificType = zero
Lifetime Hours Non-Retreat Practise of Mindfulness/Stillness Meditation (as Applicable)	
We first estimated the months over which each participant practised mindfulness/Stillness meditation (as applicable) but did not attend retreats (TotalMonthsNonRetreatPracticeSpecificType). We reached that estimate as follows.	
TotalMonthsPracticeSpecificType	Estimated total months over which the participant has practised mindfulness/Stillness meditation (as applicable) = ModSpecificTypeYears × 12 + ModSpecificTypeMonths + ModSpecificTypeWeeks/4.29 The ModSpecificType values are the participant's responses to the question about how long they have practised mindfulness/Stillness meditation (as applicable).[6]

[6] In the data-cleaning rules this is referred to as TimePractised question 2.

TotalMonthsNonRetreatPracticeSpecificType	Estimated total months over which the participant has practised mindfulness/Stillness meditation (as applicable) but did not attend retreats For retreat participants:[7] = TotalMonthsPracticeSpecificType – TotalMonthsRetreatPracticeSomeForm For Stillness Meditation participants: = TotalMonthsPracticeSpecificType An assumption here was that Stillness Meditation participants who said they had attended retreats (i.e., non-Stillness Meditation retreats) had attended those retreats prior to commencing Stillness Meditation, or had maintained their normal Stillness Meditation practice while attending those retreats. Most Stillness Meditation participants said they had not attended retreats.

We could then estimate the lifetime hours participants had spent in non-retreat practice of mindfulness/Stillness meditation (as applicable).

LifetimeHoursNonRetreatPracticeSpecificType	Estimated lifetime hours the participant has spent in non-retreat practise of mindfulness/ Stillness meditation (as applicable) = TotalMonthsNonRetreatPracticeSpecificType × HoursNonRetreatPracticePerMonth For simplicity, the equation assumes that for the period in which the participant did their non-retreat practise of mindfulness/Stillness meditation (as applicable) (i.e., Total MonthsNonRetreatPracticeSpecificType) they practised only that form of meditation.

Lifetime Hours Practise of Mindfulness/Stillness Meditation (as Applicable)

We then calculated lifetime hours spent in practise of mindfulness/Stillness Meditation (as applicable).

LifetimeHoursPracticeSpecificType	Estimated lifetime hours the participant has spent in retreat or non-retreat practise of mindfulness/Stillness meditation (as applicable) = LifetimeHoursRetreatPracticeSpecificType + LifetimeHoursNonRetreatPracticeSpecificType

Table S6

Estimation of Hours Practice in the Target Period

Variable	Definition/Calculation/Comment
TotalTargetPeriodHoursPractice	Estimated total hours of target practice in the target period For retreat participants the target period was the RPTargetRetreatDays. So for retreat participants: = RPTargetRetreatHoursPractice For Stillness Meditation participants the target period was the 7 days prior to the participant completing the questionnaire. So, as a general rule, for Stillness Meditation participants: = HoursNonRetreatPracticePerMonth/4.29 Seventeen Stillness Meditation participants (SM 4, 12, 21, 28, 32, 33, 34, 40, 42, 44, 46, 47, 56, 62, 64, 67, 69) completed the questionnaire more than 7 days after their last Stillness Meditation class and therefore did not have a class in the target period.

[7] We used TotalMonthsRetreatPracticeSomeForm in this equation rather than creating and using a new variable, TotalMonthsRetreatPracticeSpecificType. We did this due to our assumption that all retreats that retreat participants had attended were mindfulness meditation retreats (see above). Because of this assumption, had we created the new variable TotalMonthsRetreatPracticeSpecificType, it would have simply been the same as the existing variable, TotalMonthsRetreatPracticeSomeForm.

	For those participants other than SM 34: = SMHoursHomePracticePerMonth/4.29 For SM 34, SMHoursHomePracticePerMonth was zero, reflecting that this participant normally attended classes and did class practice alone. In the target period, however, the participant did not have a class. This participant had said that they typically practised one day per week, and that on days that they practised and did not have a class they typically did one 5-15 minute session. As the participant did not have a class in the target period, we assumed that they practised one day per week at home. So for this participant: = 10/60
TargetPeriodHoursPracticePerDay	Estimated hours target practice each day in the target period For retreat participants: = TotalTargetPeriodHoursPractice / RPTargetRetreatDays For Stillness Meditation participants: = TotalTargetPeriodHoursPractice / 7

5. Procedure relating to transformations

Overview

The procedure outlined in this resource was used for the dimensional, proportion, and confidence items. The procedure had two aims. The first was to determine for each variable whether to use the untransformed version or a transformed version of the variable in the ANOVAs and ANCOVAs (the "relevant analyses"). The second was to select a suitable type of transformation where that was required.

The procedure assesses non-normality using skewness and kurtosis values in each practice group (Field, 2018). In a normal distribution those values are zero. For each variable the procedure was designed to select either the untransformed or transformed version that would minimize any non-normality and ensure that it was within reasonable bounds (Field, 2018; Tabachnick & Fidell, 2013). Non-normality was treated as being within reasonable bounds where skewness and kurtosis values were below or close to one.

The outcomes of the procedure are shown in the column labelled "Form" in Table S13 below. In summary, the untransformed version was selected for 5 of the total 50 variables, and a transformed version was selected for 44. For the final variable, neither the untransformed or transformed versions were considered appropriate (see further below).

Across the total 49 untransformed and transformed variables selected for use in the relevant analyses, the highest skewness value is 1.14 and the highest kurtosis value is 1.17. For 36 of those variables, the skewness and kurtosis values are both less than one. On the basis of these outcomes, any non-normality in the 49 untransformed and transformed variables can be regarded as within reasonable bounds.

Clarifications

For each variable, we tried both log and square-root transformations. Reverse forms of those transformations were tried in appropriate cases. That tended to be where the untransformed variable was negatively skewed for at least two practices. The reverse forms involved reversing scores on the variable prior to calculating the log or square-root values. Following the reverse transformation, scores were again reversed so that they would be in the same direction as the untransformed variable. Where we refer to log or square-root transformations, that covers both the standard and reverse forms. The "Form" column in Table S13 shows the variables for which the reverse forms were selected.

If we refer to a skewness or kurtosis value, we mean the absolute value.

Key provisions

Scenario A: Untransformed values > 1 and transformed values better

In some cases, the untransformed variable had a skewness and/or kurtosis value greater than one for at least one of the three practices. If the log or square-root transformations reduced all skewness and kurtosis values to less than one, transformation was considered appropriate. If this was achieved by both the log and square-root transformations, the transformation with the better skewness values was selected.

For some variables, the log and square-root transformations each had one or more skewness or kurtosis value of one or slightly higher, but the skewness and kurtosis values for the transformed variables were still better than for the untransformed variable. In those cases, transformation was again considered appropriate. The transformation that was best at reducing the skewness and kurtosis values was selected.

Scenario B: Untransformed values ≥ 1 but acceptable and better

In this scenario, the untransformed variable had a skewness or kurtosis value of one or slightly higher in one of the practices, but that value was lower than the highest skewness or kurtosis value in the transformations. Transformation was not considered appropriate, and the untransformed variable was instead used in the relevant analyses.

Scenario C: Untransformed values < 1

Here, the untransformed variable had skewness and kurtosis values of less than one in all three practices. If the log and square-root transformations each had a skewness and/or kurtosis value greater than one in at least one practice, transformation was not considered appropriate. The untransformed variable was used in the relevant analyses.

If one of the transformations had skewness and kurtosis values of less than one for all three practices, and the skewness values were better than for the untransformed variable, the

transformed variable was selected. If both the log and square-root transformations satisfied these criteria, the transformation with the better skewness values was used.

Scenario D: Untransformed and transformed values too high

For one variable (the dimensional item negative) both the untransformed and transformed versions had skewness and kurtosis values greater than, and not reasonably close to, one. As a consequence, neither the untransformed or transformed variable was considered appropriate for the relevant analyses, so those analyses were not conducted for that variable.

6. Tables of results

Table S7

Reasons for Practising – Chi-square Tests

Variable	Shamatha Meditation (SH)		Thai Forest Meditation (TF)		Stillness Meditation (SM)		*p*	Significant differences between individual groups[a]
	n	*%*	*n*	*%*	*n*	*%*		
Reason 1 – To reduce psychological symptoms	83	33	80	31	86	88	<.001*	SM > SH and TF
Reason 2 – To improve mental wellbeing	84	88	80	83	86	93	.114	NA[b]
Reason 3 – Spiritual growth / enlightenment	84	95	80	98	85	52	<.001*	SH and TF > SM
Reason 4 – To improve relationships	84	58	80	49	84	45	.214	NA[b]
Reason 5 – To cope with life events	84	41	80	40	87	75	<.001*	SM > SH and TF

Note. The percentages are for "Yes" responses.

[a] The "greater than" sign indicates that in the post-hoc comparison values were significantly higher in one group than another ($p < .05$). [b] Not applicable. As the chi-square test indicated no significant association between "Yes" responses and practice group, differences between individual practice groups were not examined.

* $p < .05$

Table S8

Foil Items and Comparators

Item	Shamatha Meditation (SH)			Thai Forest Meditation (TF)			Stillness Meditation (SM)			*p*	Significant differences in post-hoc comparisons[a]
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*		
Foil 1: Vividly perceiving all body parts at same time	82	2.70	1.78	71	2.73	1.95	80	2.82	1.83	.818	NA[b]
Foil 2: Highly rational thinking	78	2.50	1.78	68	2.63	1.88	87	3.00	1.90	.202	NA[b]
Foil 3: Progressing into more complex states	75	2.69	1.91	68	3.26	2.01	73	3.55	1.92	.019*	SM > SH
M | dimensional items absent in goal-states	84	2.71	0.93	80	2.76	0.93	88	2.54	0.82	.511	NA[b]
M | dimensional items present in goal-states	84	5.00	1.06	80	5.25	1.10	88	5.27	1.03	.135	NA[b]

Note. All items in the table used a scale from 1 (no/none) to 7 (very high). The *p* values and significance findings are from Kruskal-Wallis tests.

[a] The "greater than" sign indicates that in the post-hoc comparison scores were significantly higher in one group than in another ($p < .05$). [b] Not applicable. As the omnibus test indicated no significant differences across the three practice groups, the post-hoc comparisons were not examined.

* $p < .05$

Table S9

Dimensional Items with Significant Differences that Remain Following the Correction for Multiple Comparisons

Item	Shamatha Meditation (SH)			Thai Forest Meditation (TF)			Stillness Meditation (SM)			*p*	Significant differences in post-hoc comparisons[a]
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*		
Breath	84	3.42	1.68	80	3.53	1.86	87	2.51	1.47	<.001	SH and TF > SM
Awareness that I am having the experience	81	4.85	1.65	72	4.85	1.84	85	3.35	1.76	<.001	SH and TF > SM
Stillness[b]	84	5.81	0.98	80	5.79	1.17	87	6.21	1.01	.004	SM > SH and TF
Silence[b]	82	5.35	1.53	79	5.81	1.26	88	5.92	1.29	.014	TF and SM > SH
Wakefulness	81	5.15	1.48	74	5.38	1.52	82	3.67	1.65	<.001	SH and TF > SM
Drowsiness[b]	83	2.24	1.26	76	1.93	1.39	87	3.41	1.84	<.001	SM > SH and TF
Ease[b]	84	5.54	1.25	80	5.71	1.12	86	5.98	1.15	.015	SM > SH
Restfulness[b]	82	5.35	1.49	79	5.11	1.83	88	5.90	1.35	.002	SM > SH and TF
Bliss	82	3.66	1.82	73	4.75	1.66	83	4.43	2.15	.001	TF and SM > SH
Joy	82	4.26	1.81	77	5.09	1.61	84	4.19	1.84	.002	TF > SH and SM
Non-doing	82	5.06	1.73	73	5.56	1.62	83	5.83	1.55	.004	TF and SM > SH
Pure being with a complete absence of doing	81	4.62	1.94	71	4.92	1.77	85	5.64	1.43	.001	SM > SH and TF
Losing normal ego/self via absorption[b]	81	5.20	1.45	75	5.08	1.69	85	5.69	1.57	.005	SM > SH and TF
Reaching a ground state of the mind	68	4.16	1.88	61	4.66	1.90	73	5.36	1.72	<.001	SM > SH and TF
Vivid	82	5.06	1.44	72	5.04	1.73	85	3.85	2.18	<.001	SH and TF > SM
Deep[b]	80	5.04	1.75	75	5.21	1.66	87	5.86	1.26	.003	SM > SH and TF
Wonderful	78	4.87	1.78	76	5.53	1.46	86	5.45	1.66	.015	TF and SM > SH

Note. All items in the table used a scale from 1 (no/none) to 7 (very high). The correction for multiple comparisons referred to in this Table S9 and in Tables S10 and S12 was based on there being 50 items in total, comprising the 48 dimensional items and the proportion and confidence items.

[a] The "greater than" sign indicates that in the post-hoc comparison scores were significantly higher in one group than in another ($p < .05$). [b] With truncation of univariate outliers.

Table S10

Dimensional Items with Significant Differences that Do Not Remain Following the Correction for Multiple Comparisons

Item	Shamatha Meditation (SH)			Thai Forest Meditation (TF)			Stillness Meditation (SM)			*p*	Significant differences in post-hoc comparisons[a]
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*		
Mental relaxation[b]	80	5.76	0.98	78	5.85	1.26	87	6.10	0.99	.047	SM > SH
Essential nature of the mind	73	3.96	1.86	58	4.66	1.97	71	4.62	2.00	.032	TF and SM > SH
Inner security	76	4.92	1.77	69	4.94	1.84	86	5.48	1.64	.031	SM > SH and TF
Timelessness	77	4.69	1.96	71	4.93	1.69	83	5.37	1.68	.044	SM > SH

Note. All items in the table used a scale from 1 (no/none) to 7 (very high).

[a] The "greater than" sign indicates that in the post-hoc comparison scores were significantly higher in one group than in another ($p < .05$). [b] With truncation of univariate outliers.

Table S11

Dimensional Items with No Significant Differences

Item	Shamatha Meditation			Thai Forest Meditation			Stillness Meditation			*p*
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	
Thoughts	84	2.55	1.53	78	2.60	1.59	87	2.87	1.35	.086
Emotions[a]	81	2.41	1.43	78	2.88	1.84	87	2.38	1.21	.323
Images	83	2.43	1.51	79	2.67	1.88	85	2.26	1.45	.585
Memories[a]	81	1.95	1.08	79	1.94	1.23	87	1.98	1.11	.808
Things around you	84	2.75	1.40	80	2.96	1.74	87	2.45	1.19	.212
Body	83	2.89	1.51	80	3.03	1.71	87	2.62	1.43	.304
Mental activity	82	2.90	1.65	77	3.12	1.69	87	2.83	1.36	.577
Clearness	84	5.31	1.25	74	5.20	1.67	81	5.15	1.64	.920
Purity	75	4.28	2.06	67	4.64	2.03	74	4.36	2.15	.576
Simplicity[a]	79	5.22	1.52	73	5.63	1.31	84	5.52	1.73	.051
Naturalness	78	5.33	1.38	71	5.17	1.75	83	5.57	1.55	.225
Calmness[a]	83	5.96	1.19	80	5.94	1.18	88	6.16	1.05	.357
Peacefulness[a]	81	5.79	0.96	80	5.77	1.24	87	6.01	1.03	.212
Happiness	78	4.67	1.71	77	5.21	1.54	85	4.64	1.79	.058
Relinquishing control	80	4.64	1.89	70	5.00	1.83	84	5.11	1.82	.204
Effort	84	2.89	1.55	75	2.55	1.39	87	2.51	1.44	.180
Essence of knowledge/knowing	74	3.84	1.99	66	3.80	2.11	78	3.40	2.17	.354
Spiritual aspect	77	4.14	1.90	71	4.52	1.93	80	3.84	2.18	.141
Inner freedom	75	4.63	1.75	69	4.64	1.98	82	4.95	1.80	.346
Changed perception of time	76	4.79	1.89	68	4.96	1.82	82	5.27	1.76	.205
Profound	82	4.79	1.78	73	5.22	1.72	87	5.06	1.94	.216
Positive[a]	82	5.95	1.20	78	5.95	1.22	88	6.10	1.17	.506
Negative[a]	81	1.22	0.55	76	1.21	0.52	84	1.20	0.53	.952
Good[a]	78	5.62	1.56	78	5.78	1.26	87	6.09	1.19	.067
Pleasant[a]	82	5.74	1.13	78	5.77	1.25	86	6.00	1.28	.112
Beyond words/language	82	4.83	2.01	75	4.81	1.87	83	5.18	1.99	.247
Difficult to describe	80	5.11	1.86	71	5.14	1.78	83	5.16	1.83	.990

Note. All items in the table used a scale from 1 (no/none) to 7 (very high).

[a] With truncation of univariate outliers.

Table S12
Proportion and Confidence Items

Item	Shamatha Meditation (SH)			Thai Forest Meditation (TF)			Stillness Meditation (SM)			*p*	Significant differences in post-hoc comparisons[a]
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*		
Proportion of practice spent having experience	84	2.42	1.34	80	2.50	1.33	88	3.48	1.30	<.001*	SM > SH and TF
Confidence could achieve again in next session	83	3.14	0.98	79	3.09	0.95	88	3.53	0.83	.002*	SM > SH and TF

Note. The proportion item used a scale from 1 (a very low proportion – 5% or less) to 6 (a very high proportion – 95% to 100%). The confidence item used a scale from 1 (no or almost no confidence) to 5 (total or almost total confidence).
[a] The "greater than" sign indicates that in the post-hoc comparison scores were significantly higher in one group than in another ($p < .05$).
* $p < .05$ and difference remains significant when correcting for multiple comparisons.

Table S13
ANOVAs

Item	Original form[a]			Form with non-normality within reasonable bounds[b]			
	p	η_p^2	Significant differences in post-hoc comparisons[c]	Form	*p*	η_p^2	Significant differences in post-hoc comparisons[c]
Thoughts	.314	.009	NA[d]	Log	.148	.015	NA[d]
Emotions[e]	.064	.023	NA[d]	SQRT	.143	.016	NA[d]
Images	.269	.011	NA[d]	SQRT	.390	.008	NA[d]
Memories[e]	.974	<.001	NA[d]	SQRT	.926	.001	NA[d]
Things around you	.075	.021	NA[d]	SQRT	.150	.015	NA[d]
Body	.231	.012	NA[d]	SQRT	.259	.011	NA[d]
Breath	<.001*	.071	SH and TF > SM	Log	<.001*	.069	SH and TF > SM
Mental activity	.484	.006	NA[d]	Log	.610	.004	NA[d]
Awareness that I am having the experience	<.001*	.145	SH and TF > SM	Original	<.001*	.145	SH and TF > SM
Stillness[e]	.015^	.033	SM > SH and TF	Reversed log	.003*	.045	SM > SH and TF
Silence[e]	.019^	.032	TF and SM > SH	Reversed log	.014*	.034	TF and SM > SH
Wakefulness	<.001*	.196	SH and TF > SM	Reversed SQRT	<.001*	.192	SH and TF > SM
Drowsiness[e]	<.001*	.152	SM > SH and TF	SQRT	<.001*	.147	SM > SH and TF
Clearness	.790	.002	NA[d]	Reversed log	.943	.001	NA[d]
Purity	.563	.005	NA[d]	Reversed log	.589	.005	NA[d]
Simplicity[e]	.215	.013	NA[d]	Reversed log	.093	.020	NA[d]
Naturalness	.288	.011	NA[d]	Reversed SQRT	.276	.011	NA[d]
Calmness[e]	.386	.008	NA[d]	Reversed SQRT	.366	.008	NA[d]
Peacefulness[e]	.285	.010	NA[d]	Reversed SQRT	.246	.011	NA[d]
Ease[e]	.049^	.024	SM > SH	Reversed log	.030^	.028	SM > SH
Restfulness[e]	.005*	.043	SM > SH and TF	Reversed SQRT	.003*	.048	SM > SH and TF

Mental relaxation[e]	.108	.018	NA[d]	Reversed log	.058	.023	NA[d]
Bliss	.001[*]	.056	TF and SM > SH	Reversed log	.001[*]	.061	TF and SM > SH
Joy	.002[*]	.051	TF > SH and SM	Reversed SQRT	.002[*]	.051	TF > SH and SM
Happiness	.058	.024	NA[d]	Reversed SQRT	.054	.024	NA[d]
Relinquishing control	.240	.012	NA[d]	Reversed SQRT	.237	.012	NA[d]
Non-doing	.010[*]	.038	SM > SH	Reversed log	.005[*]	.045	TF and SM > SH
Pure being with a complete absence of doing	.001[*]	.062	SM > SH and TF	Reversed log	.001[*]	.056	SM > SH and TF
Effort	.171	.014	NA[d]	SQRT	.193	.013	NA[d]
Losing normal ego/self via absorption[e]	.032[^]	.029	SM > SH and TF	Reversed log	.004[*]	.045	SM > SH and TF
Reaching a ground state of the mind	.001[*]	.071	SM > SH and TF	Reversed log	<.001[*]	.079	SM > SH and TF
Essential nature of the mind	.061	.028	NA[d]	Original	.061	.028	NA[d]
Essence of knowledge/knowing	.356	.010	NA[d]	Reversed log	.615	.005	NA[d]
Spiritual aspect	.114	.019	NA[d]	Reversed log	.178	.015	NA[d]
Inner security	.075	.023	NA[d]	Reversed log	.053	.026	NA[d]
Inner freedom	.460	.007	NA[d]	Reversed log	.400	.008	NA[d]
Timelessness	.049[^]	.026	SM > SH	Reversed SQRT	.053	.026	NA[d]
Changed perception of time	.247	.013	NA[d]	Reversed log	.229	.013	NA[d]
Vivid	<.001[*]	.093	SH and TF > SM	Reversed log	.001[*]	.057	SH and TF > SM
Deep[e]	.002[*]	.051	SM > SH and TF	Reversed SQRT	.003[*]	.048	SM > SH and TF
Profound	.333	.009	NA[d]	Reversed log	.227	.012	NA[d]
Positive[e]	.630	.004	NA[d]	Reversed log	.553	.005	NA[d]
Negative[e]	.972	<.001	NA[d]	NA[f]	NA[f]	NA[f]	NA[f]
Good[e]	.070	.022	NA[d]	Reversed SQRT	.065	.023	NA[d]
Pleasant[e]	.328	.009	NA[d]	Reversed SQRT	.209	.013	NA[d]
Wonderful	.024[^]	.031	TF and SM > SH	Reversed log	.017[*]	.034	TF and SM > SH
Beyond words/language	.401	.008	NA[d]	Original	.401	.008	NA[d]
Difficult to describe	.988	<.001	NA[d]	Reversed SQRT	.991	<.001	NA[d]
Proportion of practice spent having experience	<.001[*]	.121	SM > SH and TF	Original	<.001[*]	.121	SM > SH and TF
Confidence could achieve again in next session	.003[*]	.046	SM > SH and TF	Original	.003[*]	.046	SM > SH and TF

Note. SH = Shamatha Meditation. TF = Thai Forest Meditation. SM = Stillness Meditation. η_p^2 = partial eta squared. Original = untransformed variable. SQRT = square-root. For each item, the *n* for each practice is as set out in Tables S9 to S12 above. The *p* value for each item is for the Brown-Forsythe *F*-statistic.

[a] For this set of analyses, the correction for multiple comparisons was based on there being 50 items in total. [b] Meaning the form of the variable selected via the procedure set out in section 5 above. For this set of analyses, the correction for multiple comparisons was based on there being 49 items in total (all items except negative: see further below). [c] The "greater than" sign indicates that in the post-hoc comparison values were significantly higher in one group than another ($p < .05$). [d] Not applicable. As the omnibus test indicated no significant differences across the three practice groups, the post-hoc comparisons were not examined. [e] With truncation of univariate outliers. [f] Not applicable. Neither the original or transformed forms of this variable ("Negative") had non-normality within reasonable bounds (see "Scenario D" in section 5).

[*] $p < .05$ and difference remains significant when correcting for multiple comparisons. [^] $p < .05$ but does not remain significant when correcting for multiple comparisons.

Table S14
ANOVAs Excluding the 19 Participants

Item[a]	Form[b]	n_{SH}	n_{TF}	n_{SM}	p	η_p^2	Significant differences in post-hoc comparisons[c]
Thoughts	Log	76	71	84	.046^	.027	SM > TF
Emotions[d]	SQRT	73	71	84	.216	.014	NA[e]
Images	SQRT	75	72	82	.436	.007	NA[e]
Memories[d]	SQRT	74	72	84	.564	.005	NA[e]
Things around you	SQRT	76	72	84	.456	.007	NA[e]
Body	SQRT	75	72	84	.548	.005	NA[e]
Breath	Log	76	72	84	.001*	.059	SH and TF > SM
Mental activity	Log	75	70	84	.877	.001	NA[e]
Awareness that I am having the experience	Original	74	66	82	<.001*	.148	SH and TF > SM
Stillness[d]	Reversed log	76	72	84	.048^	.026	SM > SH
Silence[d]	Reversed log	74	71	85	.027^	.031	SM and TF > SH
Wakefulness	Reversed SQRT	73	67	79	<.001*	.209	SH and TF > SM
Drowsiness[d]	SQRT	76	69	84	<.001*	.157	SM > SH and TF
Clearness	Reversed log	76	68	79	.802	.002	NA[e]
Purity	Reversed log	67	60	73	.763	.003	NA[e]
Simplicity[d]	Reversed log	71	65	81	.131	.018	NA[e]
Naturalness	Reversed SQRT	70	63	80	.459	.008	NA[e]
Calmness[d]	Reversed SQRT	75	72	85	.521	.006	NA[e]
Peacefulness[d]	Reversed SQRT	73	72	84	.654	.004	NA[e]
Ease[d]	Reversed log	76	72	83	.209	.014	NA[e]
Restfulness[d]	Reversed SQRT	74	71	85	.018^	.035	SM > TF
Mental relaxation[d]	Reversed log	72	70	84	.178	.015	NA[e]
Bliss	Reversed log	74	66	81	.001*	.060	TF and SM > SH
Joy	Reversed SQRT	74	69	81	.003*	.050	TF > SH and SM
Happiness	Reversed SQRT	70	69	82	.075	.023	NA[e]
Relinquishing control	Reversed SQRT	72	63	81	.410	.008	NA[e]
Non-doing	Reversed log	74	67	80	.020^	.035	SM > SH
Pure being with a complete absence of doing	Reversed log	73	66	82	.007*	.045	SM > SH and TF
Effort	SQRT	76	68	84	.281	.011	NA[e]
Losing normal ego/self via absorption[d]	Reversed log	73	68	83	.004*	.048	SM > SH and TF
Reaching a ground state of the mind	Reversed log	61	55	70	.001*	.075	SM > SH
Essential nature of the mind	Original	65	53	70	.140	.021	NA[e]
Essence of knowledge/knowing	Reversed log	67	61	75	.661	.004	NA[e]
Spiritual aspect	Reversed log	69	64	77	.238	.014	NA[e]

Inner security	Reversed log	68	61	83	.238	.014	NA[e]
Inner freedom	Reversed log	67	62	79	.580	.005	NA[e]
Timelessness	Reversed SQRT	69	64	80	.096	.022	NA[e]
Changed perception of time	Reversed log	68	63	79	.262	.013	NA[e]
Vivid	Reversed log	74	76	82	.001*	.059	SH and TF > SM
Deep[d]	Reversed SQRT	72	68	84	.018^	.036	SM > SH and TF
Profound	Reversed log	74	66	84	.380	.009	NA[e]
Positive[d]	Reversed log	74	71	85	.865	.001	NA[e]
Good[d]	Reversed SQRT	70	70	84	.173	.016	NA[e]
Pleasant[d]	Reversed SQRT	74	71	83	.511	.006	NA[e]
Wonderful	Reversed log	70	69	83	.049^	.027	TF and SM > SH
Beyond words/language	Original	74	68	81	.418	.008	NA[e]
Difficult to describe	Reversed SQRT	72	65	80	.869	.001	NA[e]
Proportion of practice spent having experience	Original	76	72	85	<.001*	.133	SM > SH and TF
Confidence could achieve again in next session	Original	75	71	85	.006*	.044	SM > SH and TF

Note. SH = Shamatha Meditation. TF = Thai Forest Meditation. SM = Stillness Meditation. η_p^2 = partial eta squared. Original = untransformed variable. SQRT = square-root. The *p* value for each item is for the Brown-Forsythe *F*-statistic.

[a] The table includes the proportion and confidence items, and all dimensional items other than negative. For the item negative, neither the original or transformed forms had non-normality within reasonable bounds (see "Scenario D" in section 5 above), and therefore no ANOVA was conducted. The correction for multiple comparisons was based on there being 49 items in total. [b] Form of the variable selected via the procedure set out in section 5. [c] The "greater than" sign indicates that in the post-hoc comparison values were significantly higher in one group than another ($p < .05$). [d] With truncation of univariate outliers. [e] Not applicable. As the omnibus test indicated no significant differences across the three practice groups, the post-hoc comparisons were not examined.

* $p < .05$ and difference remains significant when correcting for multiple comparisons. ^ $p < .05$ but difference does not remain significant when correcting for multiple comparisons.

7. Heatmap for the dimensional and foil items

Table S16

Heatmap for Dimensional and Foil Items

No.	Item	Shamatha Meditation	Thai Forest Meditation	Stillness Meditation
1	Thoughts	2.55	2.60	2.87
2	Emotions[a]	2.41	2.88	2.38
3	Images	2.43	2.67	2.26
4	Memories[a]	1.95	1.94	1.98
5	Things around you	2.75	2.96	2.45
6	Body	2.89	3.03	2.62
7	Breath	3.42	3.53	2.51
8	Mental activity	2.90	3.12	2.83
9	Awareness that I am having the experience	4.85	4.85	3.35
10	Stillness[a]	5.81	5.79	6.21
11	Silence[a]	5.35	5.81	5.92
12	Wakefulness	5.15	5.38	3.67
13	Drowsiness[a]	2.24	1.93	3.41
14	Clearness	5.31	5.20	5.15
15	Purity	4.28	4.64	4.36
16	Simplicity[a]	5.22	5.63	5.52
17	Naturalness	5.33	5.17	5.57
18	Calmness[a]	5.96	5.94	6.16
19	Peacefulness[a]	5.79	5.77	6.01
20	Ease[a]	5.54	5.71	5.98
21	Restfulness[a]	5.35	5.11	5.90
22	Mental relaxation[a]	5.76	5.85	6.10
23	Bliss	3.66	4.75	4.43
24	Joy	4.26	5.09	4.19
25	Happiness	4.67	5.21	4.64
26	Relinquishing control	4.64	5.00	5.11
27	Non-doing	5.06	5.56	5.83
28	Pure being with a complete absence of doing[a]	4.62	4.92	5.64
29	Effort	2.89	2.55	2.51
30	Losing normal ego/self via absorption[a]	5.20	5.08	5.69
31	Reaching a ground state of the mind	4.16	4.66	5.36
32	Essential nature of the mind	3.96	4.66	4.62
33	Essence of knowledge/knowing	3.84	3.80	3.40
34	Spiritual aspect	4.14	4.52	3.84
35	Inner security	4.92	4.94	5.48
36	Inner freedom	4.63	4.64	4.95
37	Timelessness	4.69	4.93	5.37
38	Changed perception of time	4.79	4.96	5.27
39	Vivid	5.06	5.04	3.85
40	Deep[a]	5.04	5.21	5.86
41	Profound	4.79	5.22	5.06
42	Positive[a]	5.95	5.95	6.10
43	Negative[a]	1.22	1.21	1.20
44	Good[a]	5.62	5.78	6.09
45	Pleasant[a]	5.74	5.77	6.00
46	Wonderful	4.87	5.53	5.45
47	Beyond words/language	4.83	4.81	5.18
48	Difficult to describe	5.11	5.14	5.16
F1	Vividly perceiving all body parts at same time	2.70	2.73	2.82
F2	Highly rational thinking	2.50	2.63	3.00
F3	Progressing into more complex states	2.69	3.26	3.55

Note. F1, F2, F3 = The three foil items. For all 51 items, the number in each cell is the mean score. The numbers correspond to response options as follows: 1 = No/None, 2 = Very low, 3 = Low, 4 = Lower-end-moderate, 5 = Higher-end-moderate, 6= High, 7 = Very high. The colour coding is based on the magnitude of the score. White represents the midpoint between Lower-end-moderate and Higher-end-moderate. As scores move from that midpoint towards the lower end of the scale, they become increasingly blue. As they move from the midpoint towards the upper end, they become increasingly red. See Tables S8-11 above for *n*s and *SD*s.

[a] With truncation of univariate outliers.

References

Brahm, A. (2014). *Mindfulness, bliss, and beyond: A meditator's handbook*. Wisdom. (Original work published 2006)

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage. (Original work published 2001)

Goleman, D., & Davidson, R. J. (2017). *Altered traits: Science reveals how meditation changes your mind, brain, and body*. Penguin.

Hasenkamp, W., & Barsalou, L. W. (2012). Effects of meditation experience on functional connectivity of distributed brain networks. *Frontiers in Human Neuroscience, 6*, 38. https://doi.org/10.3389/fnhum.2012.00038

McKinnon, P. (1991). *Help yourself and your child to happiness*. David Lovell.

Meares, A. (1986). *The wealth within: Self-help through a system of relaxing meditation*. Hill of Content. (Original work published 1978)

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson.

Wallace, B. A. (2006). *The attention revolution: Unlocking the power of the focused mind*. Wisdom.

Woods, T. J., Windt, J. M., & Carter, O. (2020). Silence in Shamatha, Transcendental, and Stillness meditation: An evidence synthesis based on expert texts. *Frontiers in Psychology, 11*, 1259. https://doi.org/10.3389/fpsyg.2020.01259

Woods T. J., Windt, J. M., & Carter, O. (2022a). Evidence synthesis indicates contentless experiences in meditation are neither truly contentless nor identical. *Phenomenology and the Cognitive Sciences*. Advance online publication. https://doi.org/10.1007/s11097-022-09811-z