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Plan :

Development of the UMSAT6 : a self-questionnaire on mental skills.

(**U**nified **M**ental **S**kills **A**ssessment **T**ool)

Introduction

Mental skills seem to be generally well accepted but still not widely used among athletes (Keilani 2016). Despite the existence of questionnaires such as the TOPS (Test of Performance Strategies) and the OMSAT4 (Ottawa Mental Skills Assessment Tool), the assessment of mental skills still remains late in an athlete's curriculum. The length of the tests (number of items) and the financial cost of these tests may be an obstacle to early and regular assessment. In this context, in order to promote the simultaneous development of mental and physical skills, we present here the criteria that have led to the development of a new questionnaire on mental skills.

Development process

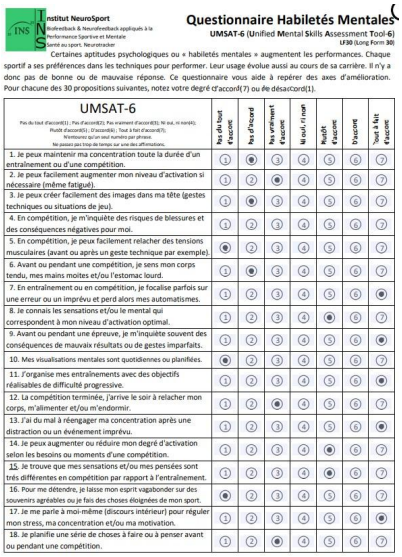
On the basis of a free, non-commercial distribution and use, our development approach is based on two axes:

1) **Reduction of the number of items and dimensions assessed.**

Special attention has been given to the issue of social desirability bias (SD). Items or dimensions that are too subject to SD bias have been removed. Some of the dimensions that could be put on a continuum (e.g., anxiety and fear) were combined when their individual assessment did not affect the coaching of the athlete.

In addition, several items are vectors pointing to other questionnaires. They highlight certain points that should ideally be validated or invalidated by other approved questionnaires.

With this unified approach, a shorter questionnaire is created, with only 30 items. This shortened mental ability questionnaire can be seen as a generic "first resort" tool. The more specialized questionnaires (TFAI2, SMS-II, TAS 20) can be used as a second-line tool, whether or not suggested by the vector items.



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Biofeedback & Neurofeedback appliqués à la Performance Sportive et Mentale
Santé au sport. Neurotracker

Questionnaire Habiletés Mentales
UMSAT-6 (Unified Mental Skills Assessment Tool-6)
LF30 (Long Form **30**)

Certaines aptitudes psychologiques ou « habiletés mentales » augmentent les performances. Chaque sportif a ses préférences dans les techniques pour performer. Leur usage évolue aussi au cours de sa carrière. Il n'y a donc pas de bonne ou de mauvaise réponse. Ce questionnaire vous aide à repérer des axes d'amélioration. Pour chacune des 30 propositions suivantes, notez votre degré d'accord(7) ou de désaccord(1).

UMSAT-6 Pas du tout d'accord(1) ; Pas d'accord(2); Pas vraiment d'accord(3); Ni oui, ni non(4); Plutôt d'accord(5) ; D'accord(6) ; Tout à fait d'accord(7); Mentionnez qu'un seul numéro par phrase. Ne passez pas trop de temps sur une des affirmations.	Pas du tout d'accord	Pas d'accord	Pas vraiment d'accord	Ni oui - ni non	Plutôt d'accord	D'accord	Tout à fait d'accord
1. Je peux maintenir ma concentration toute la durée d'un entraînement ou d'une compétition.	1	2	3	4	5	6	7
2. Je peux facilement augmenter mon niveau d'activation si nécessaire (même fatigué).	1	2	3	4	5	6	7
3. Je peux créer facilement des images dans ma tête (gestes techniques ou situations de jeu).	1	2	3	4	5	6	7
4. En compétition, je m'inquiète des risques de blessures et des conséquences négatives pour moi.	1	2	3	4	5	6	7
5. En compétition, je peux facilement relacher des tensions musculaires (avant ou après un geste technique par exemple).	1	2	3	4	5	6	7
6. Avant ou pendant une compétition, je sens mon corps tendu, mes mains moites et/ou l'estomac lourd.	1	2	3	4	5	6	7
7. En entraînement ou en compétition, je focalise parfois sur une erreur ou un imprévu et perd alors mes automatismes.	1	2	3	4	5	6	7
8. Je connais les sensations et/ou le mental qui correspondent à mon niveau d'activation optimal.	1	2	3	4	5	6	7
9. Avant ou pendant une épreuve, je m'inquiète souvent des conséquences de mauvaix résultats ou de gestes imparfaits.	1	2	3	4	5	6	7
10. Mes visualisations mentales sont quotidiennes ou planifiées.	1	2	3	4	5	6	7
11. J'organise mes entraînements avec des objectifs réalisables de difficulté progressive.	1	2	3	4	5	6	7
12. La compétition terminée, j'arrive le soir à relacher mon corps, m'alimenter et/ou m'endormir.	1	2	3	4	5	6	7
13. J'ai du mal à réengager ma concentration après une distraction ou un évènement imprévu.	1	2	3	4	5	6	7
14. Je peux augmenter ou réduire mon degré d'activation selon les besoins ou moments d'une compétition.	1	2	3	4	5	6	7
15. Je trouve que mes sensations et/ou mes pensées sont très différentes en compétition par rapport à l'entraînement.	1	2	3	4	5	6	7
16. Pour me détendre, je laisse mon esprit vagabonder sur des souvenirs agréables ou je fais des choses éloignées de mon sport.	1	2	3	4	5	6	7
17. Je me parle à moi-même (discours intérieur) pour réguler mon stress, ma concentration et/ou ma motivation.	1	2	3	4	5	6	7
18. Je planifie une série de choses à faire ou à penser avant ou pendant une compétition.	1	2	3	4	5	6	7

Questionnaire UMSAT6-LF30 long version
30 items - 6 dimensions - 3 categories

Preamble UMSAT6
"Some psychological skills or "mental skills" increase performance. Each athlete has his or her own preferences in the techniques to perform. Their use also evolves over the course of his or her career. There is no right or wrong answer. This questionnaire helps you to identify areas for improvement. For each of the following 30 propositions, note your degree of agreement(7) or disagreement(1)."

2) Integration of the selected dimensions in the triple functional network model.

This unifying framework coming from neuroscience data is used in mainstream psychology to depict the links between brain processing and the interactions between three major neural networks: the executive network, the salience network and the default mode network (Menon et al., 2001). The value of integrating this model into the sports domain has already been emphasized (van der Linden et al. 2021) and will be explored further below.

Social Desirability Bias :

Social desirability (SD) is a tendency for individuals to want to present a positive self-image based on what is considered to be desirable. Answers from self-reported questionnaires (self-administered questionnaires) show the most social desirability biases. These biases are more frequent in a context of employment and promotion. SD would be a defensive social skill.

Self-questionnaires on mental skills are not immune to this bias. The context of the performance and the number of items are two factors that may reduce their accuracy. These biases have been observed, for example, in the CSAI-2, which assesses pre-competitive anxiety (Smith et al. 2002).

Various reasons may lead - consciously or unconsciously - to embellish the answer to a question asked.

These include :

1) The desire to complete the task more quickly.

Thus, answer bias may be higher with the length of the questionnaires (e.g., OMSAT 4 has 48 items; TOPS-3 has 36 items per subscale).

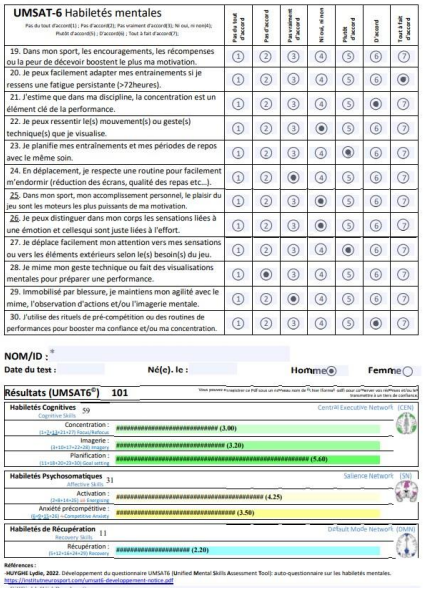
2) The context of answering the mental skills questionnaires may lead to a fear of negative judgment by the coach. The fear of deceiving the coach may cause the athlete to (even unconsciously) give a positive image of himself.

Some of the dimensions assessed in the mental skills are very subjective and therefore very vulnerable to SD bias.

Example with Fear, Motivation and Confidence

Self-ratings of levels of anxiety, fear, confidence or motivation are very subjective. Items such as "I find it difficult to control my fear" or "I am afraid of losing" or "I act with confidence in difficult sports situations" potentialize unconscious SD biases.

In a very competitive field like high performance sports, confessing a fear, a drop in confidence or motivation is not very favorable. Even with a supportive and expert entourage, social desirability biases remain unconsciously (self-deception, fear of deceiving).



UMSAT-6 Habiletés mentales

	Pas du tout d'accord	Pas d'accord	Pas vraiment d'accord	N'ai, ni non	Plutôt d'accord	D'accord	Tout à fait d'accord
19. Dans mon sport, les encouragements, les récompenses ou la peur de décevoir boostent le plus ma motivation.	①	②	③	④	⑤	⑥	⑦
20. Je peux facilement adapter mes entrainements si je ressens une fatigue persistante (>72heures).	①	②	③	④	⑤	⑥	◉
21. J'estime que dans ma discipline, la concentration est un élément clé de la performance.	①	②	③	④	⑤	◉	⑦
22. Je peux ressentir le(s) mouvement(s) ou geste(s) technique(s) que je visualise.	①	②	③	◉	⑤	⑥	⑦
23. Je planifie mes entrainements et mes périodes de repos avec le même soin.	①	②	③	④	◉	⑥	⑦
24. En déplacement, je respecte une routine pour facilement m'endormir (réduction des écrans, qualité des repas etc...).	①	②	◉	④	⑤	⑥	⑦
25. Dans mon sport, mon accomplissement personnel, le plaisir du jeu sont les moteurs les plus puissants de ma motivation.	①	②	③	◉	⑤	⑥	⑦
26. Je peux distinguer dans mon corps les sensations liées à une émotion et celles qui sont juste liées à l'effort.	①	②	③	◉	⑤	⑥	⑦
27. Je déplace facilement mon attention vers mes sensations ou vers les éléments extérieurs selon le(s) besoin(s) du jeu.	①	②	③	④	◉	⑥	⑦
28. Je mime mon geste technique ou fait des visualisations mentales pour préparer une performance.	①	◉	③	④	⑤	⑥	⑦
29. Immobilisé par blessure, je maintiens mon agilité avec le mime, l'observation d'actions et/ou l'imagerie mentale.	①	②	◉	④	⑤	⑥	⑦
30. J'utilise des rituels de pré-compétition ou des routines de performances pour booster ma confiance et/ou ma concentration.	①	②	③	④	⑤	◉	⑦

NOM/ID :*

Date du test : Né(e). le : Homme◉ Femme○

Résultats (UMSAT6^{C}) 101

Habiletés Cognitives 59 — Central Executive Network (CEN)

Concentration : ########## (3.00)

Imagerie : ########## (3.20)

Planification : ########## (5.60)

Habiletés Psychosomatiques 31 — Salience Network (SN)

Activation : ########## (4.25)

Anxiété précompétitive : ########## (3.50)

Habiletés de Récupération 11 — Default Mode Network (DMN)

Récupération : ########## (2.20)

Références :

-**HUYGHE Lydie, 2022**. Développement du questionnaire UMSAT6 (Unified Mental Skills Assessment Tool): auto-questionnaire sur les habiletés mentales.

https://institutmentalsport.com/umsat6-developpement-notice.pdf

Two versions:
Short version SF18: 18 items
Long version LF30: 30 items

Self-assessment of anxiety level

Even if the athlete recognizes that pre-competitive anxiety is always there during important challenges, self-assessment of its intensity is problematic. There is often a discordance between the perceived/verbal anxiety level and the electrodermal activity (EDA) measurement. EDA is a reliable indicator of the activity of the sympathetic system (Critchley, 2002).

Depending on the individual and past experiences, anxiety or fear can have a positive or negative impact on performance. Fear of injury or outcome anxiety can positively influence attentional faculties or, on the other hand, can reduce engagement. The impact of anxiety or fear on performance is highly dependent on the discipline but also on the athlete's injury past (injuries, competition experiences). This evaluation can only be properly done during a private interview with the athlete. A precise evaluation of the positive or negative impact of anxiety or fear is beyond the capacity of a self-questionnaire. For example, the study by Smith et al. 2002 revealed desirability biases in the assessment of the positive or negative direction of pre-competitive anxiety by the CSAI-2 questionnaire.

Assessing the feeling of control

In mainstream psychology, having control is a protective factor. According to the concept of locus of control, each individual has a picture of his or her ability to control various variables such as anxiety, motivation, etc. Thus, the level of confidence or motivation of an athlete is largely based on the internal or external nature of his "locus of control" (Paquet Y, 2009).

Therefore, it seems more relevant to us when testing mental skills by self-questionnaire to abandon the measurement of the degree of confidence or motivation in order to assess only the cognitive regulatory resources available to the athlete to boost his or her confidence and motivation, if necessary, and to reduce anxiety (Arnaud et al., 2012).

In the UMSAT6, the fear dimension is not adopted. Indeed, it can be accepted that anxiety and fear have common neurobiological substrates and are simply located on a continuum of intensity (Hoffman et al. 2022). The dimension of anxiety is kept but the measurement of its intensity is dropped in favor of the evaluation of the somatic and/or cognitive expression only, if any.

Likert scale: 7 options
Strongly disagree(1) ;
Disagree(2);
Strongly disagree(3);
Neither yes nor no(4);
Somewhat agree(5) ;
Agree(6) ;
Strongly agree(7);

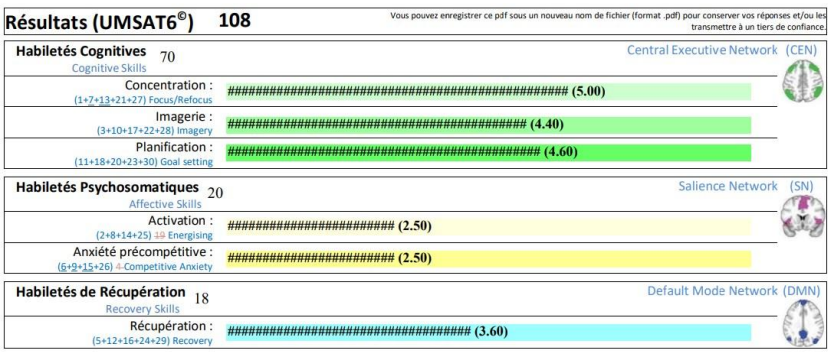
Bias reduction strategy :

The multiplication of the items of the same dimension (with an average of the scores) is one of the strategies used for reducing the biases of DS. Unfortunately, the statistical validity of a questionnaire does not protect it from unconscious bias! Items with a high probability of unconscious biases are therefore rejected.

Like item redundancy, reverse scoring also tries to reduce bias. But the real value of reverse scoring items in Likert scales is contested. They would add a form of confusion and reduce reliability by lowering the internal consistency of the dimensions being measured (Sonderen et al. 2013; MS Salazar, 2015; Suárez-Alvarez et al. 2018).

3 categories of skills :
Cognitive
Psychosomatic
Recovery

In addition to minimize the use of reverse scoring, the UMSAT6 promotes the least guilt-inducing item formulation possible. In order to free up speech a little more, some items are formulated in a projective manner in the form of a request for an opinion: "In my sport, ...", "In my discipline, I feel that ...". In the same way, particular care was taken with the introductory text of the questionnaire (preamble) to make it clear that we are in an environment free of judgment.



DIMENSIONS SELECTED IN THE UMSAT6

The short version (SF18) of the UMSAT6 is limited to 18 items divided into three skill categories (Cognitive, Psychosomatic, Recovery) representing a total of 6 dimensions: Concentration, Imagery, Planning, Activation, Pre-competitive Anxiety, Recovery (3 items per dimension).

The long version (LF30) of the UMSAT6, which is more detailed, includes 30 items within the same 6 dimensions. Some of its items test factors that may indicate alexithymia, mechanisms of motivation or ability to keep up performance during injury (mental imagery, observations of actions).

Six dimensions :
Activation
Pre-competitive anxiety
Concentration
Goal setting
Imaging
Recovery

Items LF30-26 et LF30-25 et 15

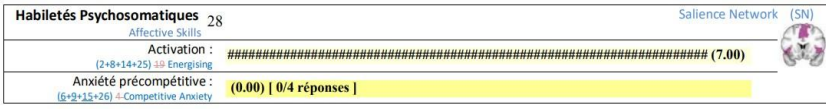
Items that point to other questionnaires do not disturb the measurement of the dimension that carries them because they are part of it.

For example, the LF30-26 item on alexithymia is included in the scoring of precompetitive anxiety because it is recognized that alexithymia is a pejorative factor for cognitive anxiety (Arnaud, J. et al. Barlow et al. 2015). However, the LF30-26 item alone cannot screen for alexithymia. The completion of the TAS 20 is required.

In case of doubt, in the case of extremes or very fluctuating values in the same subject, the completion of a specific validated questionnaire is advised:

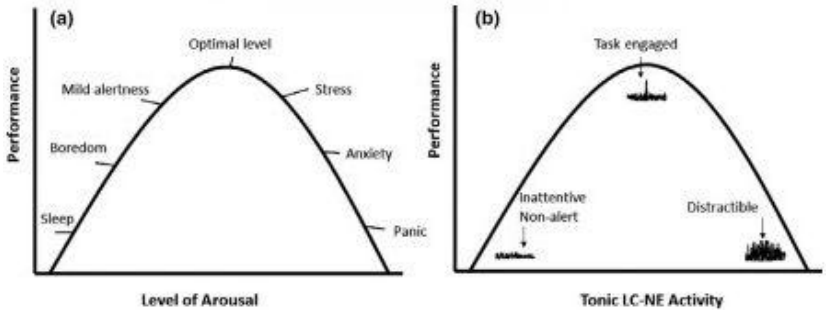
Item LF30-26: TAS 20 for the screening of alexithymia.
Item LF30-25: SMS-II for the mechanisms of motivation.
Item LF30-15: TFAI-2 for pre-competitive anxiety.

Two items are not used to calculate the final score. Their existence is useful to initiate a questioning, to help prepare the subject for a more precise answer to the next question (which will be scored).



Dimension Activation :

The Sympathetic Nervous System prepares the body for physical or intellectual activity. Intermediate arousal in the range of possible levels is associated with peak performance for behavior and learning. This crucial "arousal-performance" relationship is described by Yerhes & Dodson as an inverted U-shaped function.



Activation level and activity of the locus coeruleus-norepinephrine (LC-NE) system
van der Linden D et al. 2021 10.1111/ejn.15014

Item SF18-2 assesses the ability to energize oneself even when tired during training or competition. Knowing how to modulate one's level of activation depending on the context or timing of a competition is important (SF18-8).

Item SF18-14 links the search for optimal activation to the notion of interoception. The mental state or sensations linked to optimal activation are specific to each athlete (each mind-body relationship is unique and has been built up over the course of training and experiences). These sensations are known or identified little by little by the athlete during training or during competitions.

Items Dimension Activation :
SF18-2: I can easily increase my activation level if necessary (even when tired).
SF18-8: I can increase or decrease my level of activation according to the moments of a competition (technical gesture or time out).
SF18-14 : I know the sensations and/or the mindset that correspond to my optimal activation level.

Motivation items
LF30-19: In my sport, I find that encouragement, rewards, or fear of disappointment boost my motivation the most.
LF30-25: My personal accomplishment, enjoyment of the game are the most powerful drivers of my motivation.

Scores Activation:
Underlined = reverse scoring.
[Red] = no rating.

SF18 : (2+8+14) /3
LF30 : (2+8+14+25) /4 [19]

Items Motivation

According to the self-determination theory (Deci et al. 2008), motivation is seen on a continuum: from amotivation to extrinsic motivation (fed by external rewards or encouragement) to intrinsic motivation (pleasure found in the activity considered as an end in itself).

The level of motivation is rarely stable in a competitor. Natural variations occur during the course of the athlete's life, depending on positive or negative personal or sporting events. Extrinsic motivation is considered to be less stable because it is more sensitive to external elements, to the environment (encouragement, rewards or even arbitration mistakes). It is difficult to determine the influence of this type of motivation on performance. It seems to be useful for all athletes at various times (especially during competitions).

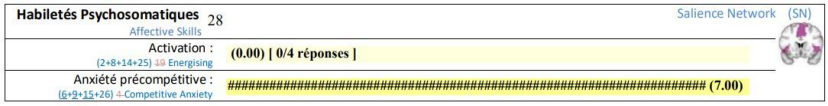
Intrinsic and extrinsic motivations are not mutually exclusive: an athlete can have a predominantly intrinsic motivation and benefit from external rewards during competitions. Extrinsic mechanisms seem to be more present in novice athletes. Intrinsic mechanisms are more often found in experienced athletes. It is recognized that the intrinsic nature of motivation is a factor that promotes performance (perseverance, curiosity, etc...).

Assessing the level or nature of motivation?

The evaluation of the level of motivation alone is sensitive to social desirability bias (cf. an item of the type: "In my sport, I am determined never to give up"). Assessing the mechanisms of motivation is less guilt-inducing and certainly less subject to these biases. In the UMSAT6, motivation is no longer assessed on its level but on its mechanisms. A better consciousness of the mechanisms of motivation will help the athlete to regain motivation when it decreases (fatigue, external or personal event, arbitration mistakes).

Item LF30-19 focuses on extrinsic motivation. This item is not rated. It is added to initiate a reflection before reading the next item on intrinsic motivation. The item LF30-25 concerning intrinsic motivation is taken into account in the final score. These two items do not measure a motivational dimension. However, they can encourage (in the case of extreme values for example) to refine the evaluation of motivation by the SMS-II self-questionnaire (Pelletier et al. 2017).

As activation and motivation are often coupled, the motivation items are integrated into the activation dimension (see below).



Precompetitive Anxiety Dimension :

Competitions are known to be more anxiety-inducing. According to Woodman and Hardy, this anxiety is involved in 10% of poor performances in competition.

Somatic and cognitive anxiety

Body signals evoking somatic anxiety are sought with the SF 18-6 item. Cognitive anxiety (results, clumsiness) is evaluated with the SF 18-9 item. The SF18-15 item seeks to indirectly identify non-conscious anxiety through different feelings between training and competition. The intensity of the anxiety is not directly examined here (see above).

Injury risk anxiety :

Assessing the intensity of injury risk anxiety is trickier because it is more prone to SD bias. Unconscious protective mechanisms (denial) may be underlying. The frequency of injury-oriented thoughts depends very much on the discipline practiced and the athlete's background. An athlete who has had to miss a season due to injury will have increased salience on this risk. The evaluation of the positive or negative impact of these thoughts on performance is not within the scope of a self-assessment questionnaire and is more a component of the psychological interview.

This item is therefore not included in the final score for the anxiety dimension. However, it is used as a vector item that leads the reader to start questioning the emotions related to the risk of injury.

In the LF30 long version of the UMSAT6, this LF30-4 vector item is deliberately positioned before the assessment of somatic and cognitive anxieties to increase the sensitivity of the latter two measures.

When in doubt or to refine the assessment of precompetitive anxiety, the TFAI-2 questionnaire is encouraged (Jones et al. 2019).

Item alexithymia/interoception

The alexithymic individual feels their emotions physically but has difficulty in differentiating, verbalizing, and regulating their emotional states (Taylor et al. 1997). This leads to difficulties in the practice of introspection. Alexithymic athletes are predicted to exhibit more cognitive anxiety than non-alexithymic athletes (Arnaud, J. et al. Barlow et al. 2015). Alexithymia affects about 10% of the population and is a risk factor for addiction and overtraining. It is more common in extreme sports and in disability (Proença Lopes et al. 2022).

Precompetitive Anxiety Items :
SF18-6: Before or during a competition, I feel my body tense, my hands sweaty, and/or my stomach heavy.
SF18-9: Before or during an event, I think about the consequences of poor results or imperfect actions.
SF18-15: I find that my sensations and/or the content of my thoughts are very different during competitions than during training.

LF30-4: In competition, I worry about the risk of injury and the negative consequences for me.
LF30-26: I can distinguish in my body between sensations related to an emotion and those related to the effort.

Pre-competitive Anxiety Scores:
Underlined = reverse scoring.
[Red] = no rating.

SF18 : (6+9+15) /3
LF30 : (6+9+15+26) /4 [4]

A low or very variable score for item LF30-26 in the same individual (during successive evaluations, for instance) encourages the use of the TAS-20 to screen for possible alexithymia.

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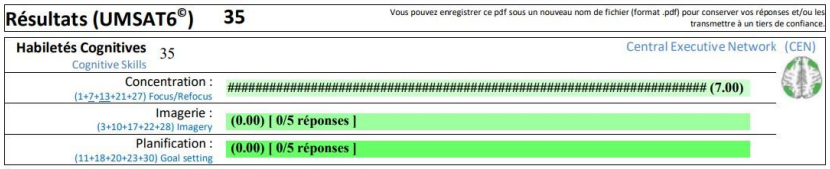
Concentration Items :
SF18-1: I can maintain my concentration throughout a practice or competition.
SF18-7: During training or competition, I sometimes focus on a mistake or an unexpected event and lose my automatisms.
SF18-13: I have difficulty re-engaging my concentration after a distraction or an unexpected event.

LF30-21: I consider that in my discipline, concentration is a key element of performance.
LF30-27: I easily shift my attention to my sensations or to external elements as needed in the game.

Concentration Scores :
SF18 : (1+7+13) /3
LF30 : (1+7+13+21+27) /5



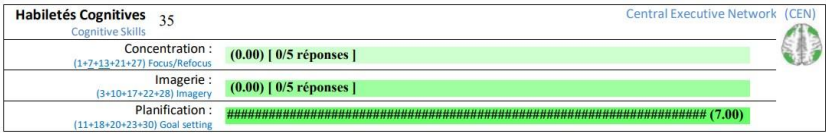
Focus dimension

Depending on the discipline, attentional needs differ in intensity and type. For example, rugby requires flexibility in external (opponents) or internal (transformation) attention. The tennis player releases his concentration during time-outs to better stay focused during the multiple exchanges. The golfer benefits from defocusing his technical movement to free the automatisms of his swing. E-sport players must keep an optimal attention to the smallest details despite very fast and prolonged game actions.

The attentional mechanisms used by the athletes change according to the different stages of skills acquisition. Thus, attentional strategies change according to the level of expertise.

The following attentional faculties are assessed: maintenance of attention (SF18-1; SF18-13), endogenous or exogenous selective attention, attentional flexibility (LF30-27), disengagement to release automatisms (SF18-7).

As in the general population, attention deficit disorder affects 7% of athletes (Han et al, 2019). Whatever the discipline, the search for performance requires a strong awareness of the athlete on attention issues. A low item score (LF30-21) may underlie an unrecognized attention deficit disorder especially if it is in contrast to scores on other items in the dimension.



Goals setting dimension

Organizational skills for training and competition are evaluated:

- Training: planning sessions, setting achievable objectives of progressive difficulty.
- Competition: Management of equipment, logistics before a competition; pre-performance competition rituals.

Items LF30-23 and SF18-11 (or LF30-20) introduce two important notions for performance:

1/ The notion of organization of recovery phases.

The recovery phase is just as important as the physical activity phase. Trying to organize rest phases implies an awareness of the importance of such phases for optimal training.

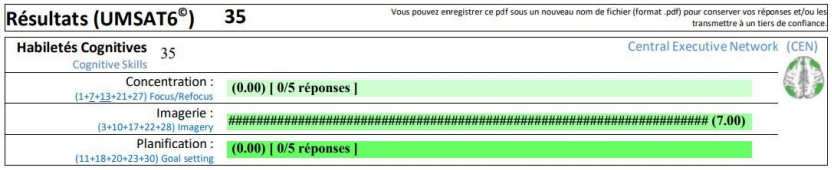
2/ A degree of adaptability

Knowing how to quickly adjust the content or intensity of training in the event of abnormal persistent fatigue can prevent overtraining and proves a certain capacity for interoception.

Items Goals setting :
SF18-4: I organize my training with achievable goals of increasing difficulty.
SF18-11: I can easily adapt my training if I feel persistent fatigue (>72h).
SF18-18: I plan a series of things to do or think about before or during a competition.

LF30-23: I plan my training and rest periods with equal care.
LF30-30: I use pre-competition rituals or performance routines to boost my confidence or focus.

Scores Goal setting :
SF18 : (4+11+18) /3
LF30 : (11+18+20+23+30) /5



Mental imagery dimension

Motor imagery (MI) increases motor performance (Ladda et al 2021). MI consists of creating a visual image of movement or simulating the sensations associated with movement. Kinesthetic imagery can induce body perception. They are commonly accepted as being the most performing. Temporal congruence between motor imagery and actual execution is considered a potential marker of mental imagery strength (Guillot et al., 2012).

Gesture imagery (stored in the premotor cortex) and maintained by sensory feedback during actual actions. Prolonged immobilization stops these kinesthetic sensations. In rehabilitation, mental imagery techniques, mime or observation of actions will feed this motor pattern which will then fade less quickly over time.

Mental Imagery Items :
SF18-3: I can easily create images in my head (technical moves or game situations).
SF18-10 : My mental visualizations are daily or planned.
SF18-17 : I talk to myself (inner speech) to regulate my stress, my concentration and/or my motivation.

LF30-22: I can feel the movements or technical gestures that I visualize.
LF30-28: I mime my technical gesture or do mental visualizations to prepare for a performance.

Mental Imagery Scores :
SF18 : (3+10+17) /3
LF30 : (3+10+17+22+28) /5

Self-talk and mental imagery are seen as different skills.
The self-talk technique would be useful in the learning phase. It appears to be more damaging to performance in experienced athletes. This deliberate self-talk can indeed cause a focus on the gesture that perturbs the motor automatisms. Thus, MI seems to be preferred by athletes with a high level of expertise. MI and internal speech are sometimes used together (Robin et al. 2021).
For simplification, the self-talk item (SF18-17) is incorporated into the imagery dimension of the UMSAT6.

Recovery dimension

Sporting activities are beneficial to health, but intensive practice requires particular vigilance. The ability of a top athlete is the result of a long process of adaptation to training induced by an optimized succession of overcompensation phases. The muscular constraints and contractions resulting from training require a period of essential rest (SF18-5). There is thus a delicate balance between, on the one hand, the disturbances caused by muscular effort and, on the other hand, the recovery processes. Thus, the trainer organizes intensive training cycles and recovery periods.

However, cumulative training charges sometimes lead to overwork or even overtraining. There is no pathognomonic sign of poor training tolerance, but persistent fatigue is found quite often. It is accepted that there is a continuum of duration between the signs of fatigue linked to training (transient) and the fatigue of overtraining, which is persistent (SF18-11).

It should be noted that the most motivated athletes are the most prone to overtraining because they are not very attentive to the body's alarm signals.

Items Recovery :
SF18-5: During a competition, I can easily release muscle tension (before or after a technical move, for example).
SF18-12: After a competition, I can relax my body, eat and/or fall asleep in the evening.
SF18-16: To relax, I let my mind wander to pleasant memories or I do things far from my sport.

LF30-24: When traveling, I follow a routine to fall asleep easily (reduction of screens, quality of meals etc...).
LF30-29: Immobilized by injury, I maintain my agility with mime, action observation and/or mental imagery.

Scores Recovery :
SF18 : (5+12+16) /3
LF30 : (5+12+16+24+29) /5

Sleep, nutrition and injuries

Athletes are under heavy pressure. The increase in physical or psychological constraints related to exercise, the pressure of competitions push athletes to a total physical and psychological engagement.

The contribution of nutrition and sleep to the optimization of recovery is no longer in question. However, we often observe in the practice field a difficulty in deactivation, a difficulty in eating after an intense effort or even sleep disorders (SF18-24).

Prolonged fatigue leads to poor performance and injury. More than 80% of diseases and injuries are preceded by a peak training load (Foster et al. 2001). Fatigue increases the risk of anterior cruciate ligament injury in soccer players (McLean et al., 2009). In ice hockey, the risk of concussion is enhanced (Stevens et al., 2008).

Physical and mental fatigue

Overtraining leads to mental fatigue and sometimes demotivation. Overtrained athletes are more impulsive, less attentive which reduces their neuromuscular coordination.

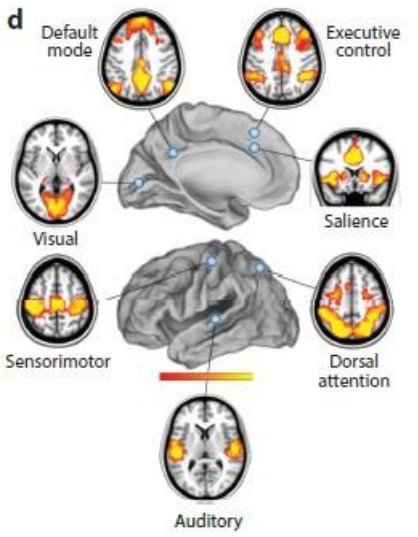
There is a kind of connection between physical and mental effort: the reduced activity of the lateral prefrontal cortex attests to this (Blain et al. 2019). This area is affected by the overload of sports training as that exposed to excessive cognitive work (SF18-16).

Maintaining performance despite injury

During prolonged immobilization due to injury, the motor patterns developed during training should ideally be maintained. During the phase of strict immobility, these motor patterns are indeed disconnected from the sensory feedback of real actions. Techniques such as miming a gesture, observing a game action and mental imagery make it easier to get back into the game (LF30-29).

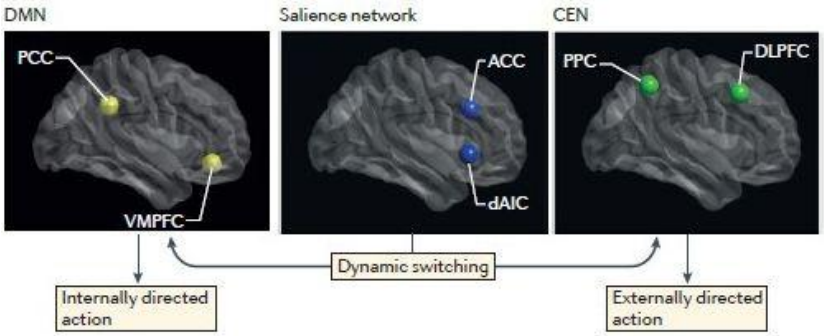
Integration in the triple functional network model

It is reasonable to postulate that the neurophysiology of the athlete is similar (in its main mechanisms) to that of healthy non-athletic populations. We can then visualize a continuum in brain activity: from optimal functioning (athlete) to dysfunction (clinical population) to so-called normal functioning (healthy non-athletic population). During his training and his sports life, the high level athlete can - like everyone else - oscillate between the two extremes of this continuum.



Different brain networks
Marcus E. Raichle, 2015
10.1146/annurev-neuro-071013-014030

In the search for the neurobiological mechanisms underlying sports performance, the sensory-motor brain network is the most studied. For example, Sun Mi Kim's study compares the connectivity between the sensorimotor network and the precuneus in athletes and in a clinical population (Sun Mi Kim et al. 2021). Other brain networks are also involved in sports practice (DMN, SN, ECN). These networks correspond to a synchronization of the activity of anatomically distant brain regions. This is also called "functional connectivity" (visible in fMRI or EEG).



Model of the triple functional network : DMN (Default Mode Network) : PCC posterior cingulate cortex; VMPFC ventromedial prefrontal cortex - **SN (Salience Network)** : dAIC dorsal anterior insular cortex ; ACC anterior cingulate cortex - **CEN (Central Executive Network)** : PPC : posterior parietal cortex ; DLPFC dorsolateral prefrontal cortex. Uddin L. Q. & Menon V., 2009 The anterior insula in autism: under-connected and under-examined, om Neurosci. Biobehav. Rev., 33 (8) 1198–1203.

In general psychology, the triple functional network model provides a useful unifying generic framework for understanding disorders such as attention deficit disorder, anxiety, pain, sleep disorders, etc. This framework describes the disorders as caused by sub-optimal interactions between three large-scale neural networks: the default network (self-representation), the salience network (detection and selection of relevant stimuli) and the executive network (actions on the environment).

The dimensions assessed in performance (attention, planning, activation, etc.) fit naturally into this triple model. Recently, van der Linden and colleagues have pointed out the interest of integrating the interactions between these three major brain networks to explain the sensations described by athletes during the state of Flow (van der Linden D et al. 2021).

The proposed relationships between the Flow state and brain networks support the generation of new hypotheses and research in the field of performance. Indeed, this integration has several advantages:

1/ It guides the process of simplifying the number of dimensions to be assessed in performance.

2/ It highlights the importance of evaluating "recovery skills" linked to the DMN rest network (see below).

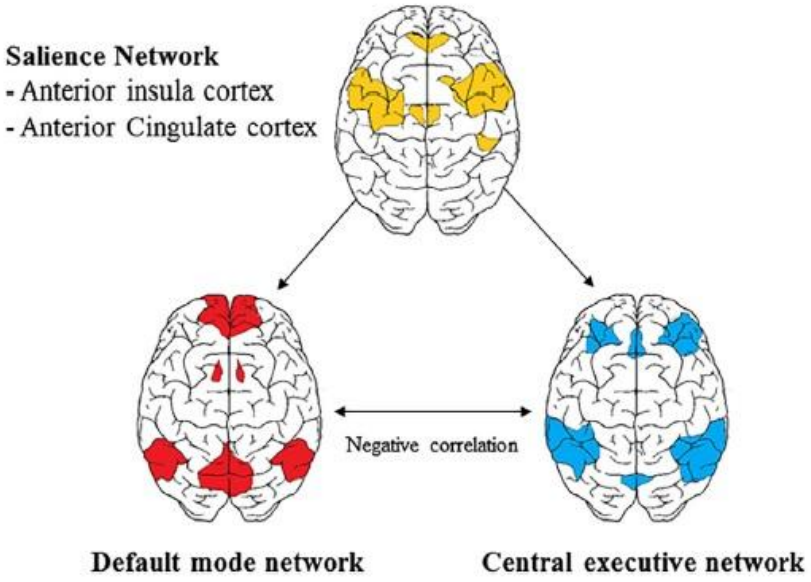
3/ It guides and facilitates the choice of the type of mental preparation by summarizing it in 3 axes that correspond to the 3 major brain networks (salience network, central executive network, default network).

Salience Network :

The athlete's brain is constantly bombarded with stimuli from the environment and from his or her own body. The relative salience of these stimuli determines which ones are worthy of attention for play. Thus, the salience of a stimulus makes it more likely to be differentiated from other stimuli. The perceived salience of a stimulus is different from its sensory intensity. For example, a fire of a certain intensity will not have the same salience (attention) depending on whether it occurs in a cupboard or on the gas stove.

Salience applies to visual and auditory perceptions but also to bodily sensations (interoception). The level of activation (which can be seen as a state of heightened awareness and sensitivity to the environment) is one of the factors that can make stimuli more or less salient. Physiological activation can influence the priority given to the most salient stimuli in a context. At the extreme, excessive physiological activation can induce anxiety (cognitive or somatic) or even fear. Seeley et al. have shown that the level of anxiety correlates with the activity of the salience network (but not that of the executive network).

There is considerable evidence to suggest that physiological arousal (the level of activation) may be correlated with salience network activity and connectivity (Schneider et al., 2016; Xia et al., 2017; Young et al., 2017).



The salience network activates the default network (DMN) or the central executive network (CEN) as needed. van der Linden D et al. 2021 10.1111/ejn.15014

The salience network is a network of brain areas connected to each other over long distances (so-called large-scale network). The salience network is anchored in the anterior insula (AI) and dorsal anterior cingulate (dACC) (Menon and Uddin, 2010; Menon, 2015). This brain network has a central role in detecting relevant stimuli but also in coordinating which resources to allocate. These brain structures play an important role in the cortical regulation of cardiac autonomic activity (Williamson et al., 2003; Williamson, 2015). The functional association between HRV (Heart Rate Variability) and the salience network is reported in the literature (Thayer et al., 2012; Chang et al., 2013).

Motivation is one of the major aspects of salience in humans (Winton-Brown et al., 2014). Intuitively, motivation and physiological activation are related. Indeed, it is easier to become physiologically activated the higher the motivation. This link is found at the neuroanatomical level. Intrinsic motivation is associated with activation of the anterior insula and striatum, for example (Lee et al. 2017) .

The dimensions of activation, anxiety, and motivation thus share a common neurophysiological substrate. Based on these data, these three dimensions were categorized into the UMSAT6 Salience Network group.

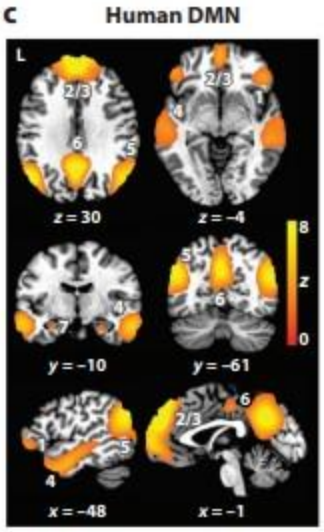
The salience network (specifically the right insula) mediates the transition to the central executive or default mode network. It guides the production of relevant reactions to salient stimuli by activating the DMN (inward, self-oriented cognition) or the CEN (outward, goal-oriented cognition).

Central Executive Network :

Processes of externally oriented attention are underpinned by the Central Executive Network (CEN), whose major nodes include the dorsal lateral prefrontal cortex (dlPFC) and the posterior parietal cortex (PPC).

The CEN maintains information in working memory. It integrates sensory and interoceptive information, plans, makes decisions, and then executes goal-directed behaviors (Menon, 2011).

Attention, planning, imagery are thus underpinned by a succession of activations and deactivations of interconnected attentional subnetworks (Lanssens et al. 2020; Vossel et al., 2014; Ciocca, 2019; Enriquez-Geppert et al. 2019; Han et al., 2019; Pamplona et al., 2020).



Raichle, 2015
10.1146/annurev-neuro-071013-014030

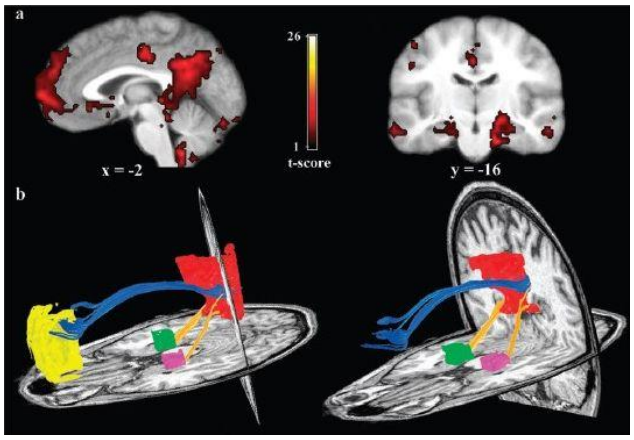
These three dimensions of attention, planning, and imagery are thus brought together in the UMSAT6 Central Executive Network group.

Default Mode Network :

The so-called "default mode network" (DMN) is the most studied brain network. The default mode network is a set of brain regions, distant from each other, which are activated synchronously when the attention of an individual is not oriented towards the outside world.

This network is activated spontaneously when the subject is not engaged in a cognitive activity oriented towards a specific goal or when he/she gives free rein to his/her thoughts. It is associated with mental activities of introspection, of reference to oneself (recollection of autobiographical experiences for example).

Similarly, DMN activity would be increased when we seek to understand the mental states of others.



Strutural connectivity of the DMN: fibers of the cingulum bundle (in blue) linking the ventromedian prefrontal cortex (yellow) and the posterior cingulate cortex (red). Michael D. Greicius et al. 2009 doi:10.1093/cercor/bhn059

The DMN has the most intense metabolic activity: 60-80% of global brain activity is located in this resting network. Its activity decreases as soon as the subject performs any cognitive task or action with a specific goal. The DMN "disengages", while the activity of the central executive network varies in the opposite direction. The activities of the networks are therefore "anti-correlated" (Raichle et al. 2001).

We observe spontaneous fluctuations in activity within these large networks in cycles of about 10 seconds: this activation/deactivation dynamic, this flexible spontaneous activity, would allow mental processes to remain operational and ready for use (Greicius et al. 2003).

Links with rest and recovery

The central executive and salience networks have been shown to be associated with sympathetic system control, whereas the default mode network is associated with parasympathetic system control (Beissner et al., 2013).

Limitations

As with any construct, there is room for refinements in this questionnaire. The UMSAT6 is based on the experience and validation of other questionnaires that have been commonly used in sport for many years. It contains the dimensions that have proven to be useful. To date, it has not yet been subject to proper multicenter statistical validation (internal consistency - Cronbach's alpha - level of correlation with the social desirability test for example).

Students who are interested (under the auspices of their university) in conducting an item validity study of the UMSAT6 can contact the author. A version of the UMSAT6 questionnaire with their university or institution's letterhead will be provided free of charge.

The writing of some items may change based on feedback from users and reliability studies by discipline or level of expertise. Sport professionals who wish to participate in the optimization of the questionnaire can send their feedback or suggestions to the author.

Usage and copyright

This self-administered questionnaire is neither a diagnostic nor a selection tool. The scores generated by categories and sub-scales are intended to facilitate intra-individual comparison. For example, a test at the beginning and end of the season may show progress in the acquisition of mental skills. This self-questionnaire can be used before and after learning a mental preparation to assess the impact on the different dimensions. The UMSAT6 can also point to the type of mental coaching that is most appropriate at a given time, among three main directions: activation (salience network), recovery (default mode network), cognition (central executive network). Even if it is true that there are different needs depending on the sport, the objective is to develop mental skills that are fairly balanced around these three axes.

Are inter-individual comparisons useful ?

Comparing objective values (e.g. a biological parameter) to a reference group can be very instructive. An inter-individual comparison on more subjective data from a self-questionnaire is more controversial.

The statistical validation of a questionnaire requires that it be administered to a large number of athletes. With many measures available, it may be tempting to compare skill scores between athletes in order to quickly detect possible weaknesses. However, depending on the context, certain mathematical calculations (even purely statistical ones) may become irrelevant.

In the special context of performance search, using a self-questionnaire to compare it to a statistically established " perfect score " induces de facto unconscious social desirability biases (see above). These biases can distort the final values, making the comparison to a normative basis by discipline/expertise of poor relevance. In addition, self-assessment biases vary across personalities. Also, inter-individual variations only inform us about an abstraction (a very heterogeneous study population: personality, context at the time of the test etc...).

The type of use (conscious or automatic), the feeling of mastery of a skill are different from one athlete to another.

When fully assimilated, certain skills can become automatic and therefore less prominent in the athlete's consciousness. They will therefore be "unfairly" rated lower in a self-questionnaire.

The feeling of mastering a new skill is always stronger immediately after training. This feeling diminishes (somewhat paradoxically) gradually over time as the skill is absorbed and automated in training and competition. The athlete's awareness of the difficulties of putting the skill into practice on the field is perhaps an explanation for this natural decline in the feeling of mastery.

Mental skills are not permanently acquired! As with physical training, any reduction in practice makes them less effective. The real effectiveness of these skills therefore varies during the course of a season according to the nature and difficulty of the training sessions or according to the experiences gained in competition.

Here we see the limits of an attempt at inter-individual comparison on data from a self-questionnaire.

The study of intra-individual variations provides information on what happens to real individuals. It is still possible with data from self-completed questionnaires because self-report bias is assumed to be approximately constant within the same individual. Therefore, when using self-assessment questionnaires, it seems more reasonable and ethical to us to favour an intra-individual comparison (evolution of scores within the same individual). This single intra-individual comparison throughout the course of the sport already gives orientations for developing mental skills.

The comparison of an athlete's scores with reference scores by discipline or level of expertise is therefore not the purpose of the UMSAT6. The scores are given as an indication. They are intended for intra-individual comparison (e.g. before after mental preparation) rather than for comparison between athletes. This self-questionnaire evaluates progress in mental skills.

The UMSAT6 can be used as a support during a semi-structured interview or as a basis for an interview with a professional trained in mental skills.

Enhanced didactic writing :

The items have been written with a strengthened didactic spirit. Emphasis is also put on the notion of interoception (sensorial or emotional perceptions).

Ex1 : " I talk to myself (self-talk) to regulate my stress, my concentration and/or my motivation " introduces the benefit of self-talk as a re-assurance, motivation or attention maintenance technique.

Ex2 : "I can easily adjust my training if I feel persistent fatigue (>72h)" sensitizes to the early signs of overtraining.

Thus, the reading of the items allows a progressive absorption of the different aspects of mental skills. The regular completion of the UMSAT6 gradually increases awareness of mental techniques even if mental training is not carried out immediately afterwards. The athlete will be able to seek to develop a mental skill on his own that he had little or no practice in.

Mrs HUYGHE Lydie is the author of the UMSAT6 questionnaire: design, development, java development of the associated self-fillable PDF and English translation of the items.

The latest version of the UMSAT6 can be downloaded free of charge from the Neurosport Institute website.
https://institutneurosport.com/questionnaire-umsat6-us.html

Version imprimable (champs vides)
https://institutneurosport.com/umsat6-lf30-paper.pdf

https://institutneurosport.com/umsat6-sf18-paper.pdf

Latest version of this document :
https://institutneurosport.com/umsat6-development-notice-us.pdf

Conclusion

This work of simplification of the self-assessment of mental skills was based on validated questionnaires commonly used in sport (TFAI-2, SMS-2, TAS 20 etc...).

The inclusion of mental skills within the three major brain networks that drive them (DMN, SN, ECN) has made it possible to decrease the number of dimensions to be assessed and to open up a new category of skills called recovery skills.

Indeed, the dominant activity of the resting network (DMN) reminds us of the importance of physical and mental recovery abilities. This ability to recover enables us to maintain a good flexibility in the dynamics between these three networks. This flexibility will sometimes lead to the optimal state of flow.

The ultimate goal of our simplification and unification approach is an early and repeated evaluation of mental skills. Indeed, the simultaneous development of physical and mental abilities will help preserve health in sport.

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Mental Skills Questionnaire

UMSAT-6 (Unified Mental Skills Assessment Tool-6)

LF30 (Long Form 30))

Some psychological skills or "mental skills" increase performance. Each athlete has his or her own preferences in performance techniques. Their use also evolves over the course of a career. There are no right or wrong answers. This questionnaire will help you identify areas for improvement.

For each of the following 30 propositions, note your degree of agreement(7) or disagreement(1).

UMSAT-6 Strongly disagree(1); Disagree(2); Not really disagree(3); Neither yes nor no(4); Somewhat agree(5); Agree(6); Strongly agree(7); Circle only one number per sentence. Do not spend too much time on any one statement.	Strongly disagree	Disagree	Not really disagree	Neither yes nor no	Somewhat agree	Agree	Strongly agree
1. I can maintain my concentration throughout a training session or competition.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2. I can easily increase my activation level if necessary (even when tired).	(1)	(2)	(3)	(4)	(5)	(6)	(7)
3. I can easily create images in my head (technical gestures or game situations).	(1)	(2)	(3)	(4)	(5)	(6)	(7)
4. In competition, I worry about the risk of injury and the negative outcomes for me.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
5. In competition, I can easily release muscular tension (before or after a technical move for example).	(1)	(2)	(3)	(4)	(5)	(6)	(7)
6. Before or during a competition, I feel my body tense, my hands sweaty and/or my stomach heavy.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
7. During training or competition, I sometimes focus on a mistake or an unexpected event and lose my automatisms.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
8. I know the sensations and/or mindset that correspond to my optimal activation level.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
9. Before or during an event, I often worry about the consequences of poor results or imperfect actions.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
10. My mental visualizations are daily or planned.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
11. I organize my training sessions with achievable goals of progressive difficulty.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
12. After the competition, I can relax my body, eat and/or fall asleep in the evening.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
13. I have difficulty re-engaging my focus after a distraction or unexpected event.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
14. I can increase or decrease my level of activation depending on the needs or times of a competition.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
15. I find that my feelings and/or thoughts are very different in competition than in training.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
16. To relax, I let my mind wander to pleasant memories or do things that are not related to my sport.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
17. I talk to myself (self-talk) to regulate my stress, my concentration and/or my motivation.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
18. I plan a series of things to do or think about before or during a competition.	(1)	(2)	(3)	(4)	(5)	(6)	(7)

UMSAT-6 Mental Skills Strongly disagree(1); Disagree(2); Not really disagree(3); Neither yes nor no(4); Somewhat agree(5); Agree(6); Strongly agree(7);	Strongly disagree	Disagree	Not really disagree	Neither yes nor no	Somewhat agree	Agree	Strongly agree
19. In my sport, encouragement, rewards, or fear of disappointment boost my motivation the most.	1	2	3	4	5	6	7
20. I can easily adjust my training if I feel persistent fatigue (>72 hours).	1	2	3	4	5	6	7
21. I consider that in my sport, attention is a key element of performance.	1	2	3	4	5	6	7
22. I can feel the move(s) or technical gesture(s) that I visualize.	1	2	3	4	5	6	7
23. I plan my training and recovery times with equal care.	1	2	3	4	5	6	7
24. When I am on the road, I follow a routine that helps me fall asleep easily (less screen time, quality of food etc...).	1	2	3	4	5	6	7
25. In my sport, my personal achievement and the fun of the game are the most powerful drivers of my motivation.	1	2	3	4	5	6	7
26. I can differentiate in my body between sensations related to an emotion and those related to the effort.	1	2	3	4	5	6	7
27. I easily shift my attention to my sensations or to external elements according to the need(s) of the game.	1	2	3	4	5	6	7
28. I mimic my technical gesture or use mental visualizations to prepare a performance.	1	2	3	4	5	6	7
29. When restrained by injury, I maintain my agility with mime, action observation and/or mental imagery.	1	2	3	4	5	6	7
30. I use pre-competitive rituals or performance routines to boost my confidence or concentration.	1	2	3	4	5	6	7

NAME/ID : _

Test date : Born : ◯ Male ◯ Female

Results (UMSAT6©)

You can save this pdf under a new file name (.pdf format) to keep your answers and/or to transmit them to a trusted third party.

Cognitive Skills
Habiletés Cognitives

Central Executive Network (CEN)

Focus/Refocus :
(1+7+13+21+27) Concentration

Imagery :
(3+10+17+22+28) Imagerie

Goals setting :
(11+18+20+23+30) Planification

Affective Skills
Habiletés Psychosomatiques

Salience Network (SN)

Energising :
(2+8+14+25) ~~19~~Activation

Competitive Anxiety :
(6+9+15+26) 4Anxiété précompétitive

Recovery Skills
Habiletés de Récupération

Default Mode Network (DMN)

Recovery :
(5+12+16+24+29) Récupération

References :
- HUYGHE Lydie, 2022. Development of the Unified Mental Skills Assessment Tool (UMSAT6): a self-administered questionnaire on mental skills.
https://institutneurosport.com/umsat6-development-notice-us.pdf

Institut NeuroSport
Biofeedback & Neurofeedback applied to
Sports and Mental Performance
Healthcare to sport. Neurotracker

Mental Skills Questionnaire

UMSAT-6 (Unified Mental Skills Assessment Tool-6)

SF18 (Short Form 18)

Some psychological skills or "mental skills" increase performance. Each athlete has his or her own preferences in performance techniques. Their use also evolves over the course of a career. There are no right or wrong answers. This questionnaire will help you identify areas for improvement.

For each of the following 18 propositions, note your degree of agreement(7) or disagreement(1).

UMSAT-6 Strongly disagree(1); Disagree(2); Not really disagree(3); Neither yes nor no(4); Somewhat agree(5); Agree(6); Strongly agree(7); Circle only one number per sentence. Do not spend too much time on any one statement.	Strongly disagree	Disagree	Not really disagree	Neither yes nor no	Somewhat agree	Agree	Strongly agree
1. I can maintain my concentration throughout a training session or competition.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2. I can easily increase my activation level if necessary (even when tired).	(1)	(2)	(3)	(4)	(5)	(6)	(7)
3. I can easily create images in my head (technical gestures or game situations).	(1)	(2)	(3)	(4)	(5)	(6)	(7)
4. I organize my training sessions with achievable objectives of progressive difficulty.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
5. During competition, I can easily release muscular tension (before or after a technical move for example).	(1)	(2)	(3)	(4)	(5)	(6)	(7)
6. Before or during a competition, I feel my body tense, my hands sweaty and/or my stomach heavy.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
7. During training or competition, I sometimes focus on a mistake or an unexpected event and lose my automatisms.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
8. I know the sensations and/or mindset that correspond to my optimal activation level.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
9. Before or during an event, I often worry about the consequences of poor results or imperfect actions.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
10. My mental visualizations are daily or planned.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
11. I can easily adapt my training if I feel persistent fatigue (>72 hours).	(1)	(2)	(3)	(4)	(5)	(6)	(7)
12. After the competition, I can relax my body, eat and/or fall asleep in the evening.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
13. I have difficulty re-engaging my focus after a distraction or unexpected event.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
14. I can increase or decrease my level of activation depending on the needs or times of a competition.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
15. I find that my feelings and/or thoughts are very different in competition than in training.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
16. To relax, I let my mind wander to pleasant memories or do things away from my sport.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
17. I talk to myself (self-talk) to regulate my stress, my concentration and/or my motivation.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
18. I plan a series of things to do or think about before or during a competition.	(1)	(2)	(3)	(4)	(5)	(6)	(7)

UMSAT-6 Mental Skills

The following questions are optional.
They do not affect the score of the different skills.

What is your primary sport?
Level of practice (circle one) : International/ National / Regional / Departmental / Recreational
How many years have you been practicing this discipline? _____ years of practice.
How many hours of training per week? _____ hours per week.

Put a cross to place you between these two extremes:

1. In your opinion, how important is mental training in improving the performance of an athlete in all disciplines ?

No interest |---------- Capital

2. In your eyes, how important is mental training in your discipline ?

No importance |---------- Capital

3. This past year, what proportion of your technical errors do you attribute directly to the mind (excessive anxiety, loss of concentration, negative thoughts etc.) ?

None |---------- All

NAME/ID : _
Test date: Born : ◯ Male ◯ Female

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Habiletés Psychosomatiques

Salience Network (SN)

Energising : (2+8+14) Activation
Competitive Anxiety : (6+9+15)Anxiété précompétitive

Recovery Skills
Habiletés de Récupération

Default Mode Network (DMN)

Recovery : (5+12+16) Récupération

References :
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https://institutneurosport.com/umsat6-development-notice-us.pdf