

Life and Health

The Mental Health Calculator:

User Guide



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1 General

The complexity, which an underwriter faces with mental health disclosures cannot be assessed by a purely univariate underwriting approach. Combinations of multiple diagnoses that include mental illness, risk factors (such as sleep disturbance, lack of concentration or bullying), functional and dependency disorders are much too complex to accurately assess by rating each component individually.

A univariate approach could lead to risks being overestimated or underestimated, which in the worst case could lead to an unjustified declinature of cover for the applicant (overestimated) or a negative impact on the portfolio (underestimated).

That is why we at Munich Re have developed a multivariate approach that encompasses all the main factors influencing mental health underwriting.

2 Structure of the Mental Health Calculator

The Mental Health Calculator (MHC) in MIRA has a semi-static user interface. Individual sections can be expanded and collapsed as needed, while the contents of the sections cannot be changed. For this reason, the variables that can be entered in the respective sections are divided into mandatory and optional entries, as some entries are not mandatory, or present, for all diagnoses. In all sections, the mandatory entry fields are arranged on the left and the optional input fields are listed on the right (depending on disease entry).

Enter the date of the last symptoms



Dates can be entered in a month format or as year only. Please note that if only the year is entered, the last possible date is assumed (i.e. December of the respective year). In cases where loadings are reducing between the first and second year since symptoms, this may result in a higher rating if only the year and not the month is entered. Therefore, when available, the loading better reflects the risk, if the exact date (incl. month) is provided.

Everything is possible – nothing is necessary Inputs even without a main psychiatric diagnosis



The calculator can also be used to assess risk when there is no psychiatric diagnosis (yet). This is a prognostic function that enables the underwriter to assess a potential risk for the development of a mental illness if there are indications (e.g. multiple risk factors or related functional disorders). Depending on the data entered, the corresponding rates and/or additional information texts are then displayed on the results page.

Sections in the calculator:

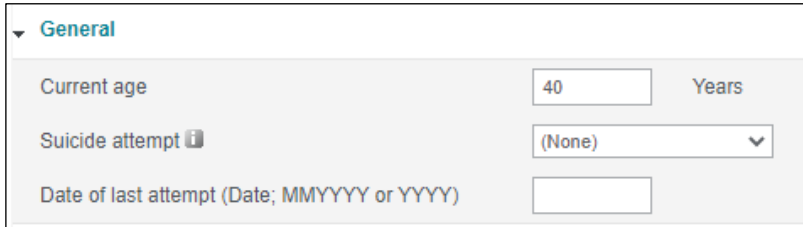
The calculator is divided into four main sections. (i) mental disorders (main diagnoses), (ii) risk factors, (iii) substance-related and non-substance-related dependence disorders, and (iv) functional disorders. The disorders covered by the calculator are summarised in Table 1 of the Appendix.

Section 1 - General information

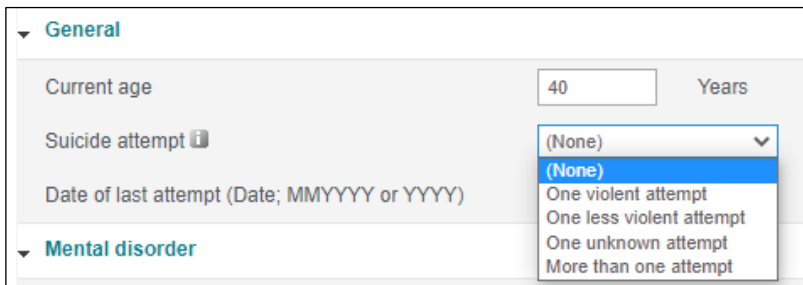
In the first section, age and, due to the significant impact on risk assessment, suicide attempts are asked.

Suicide attempts are divided into violent and less violent attempts, which in turn affects the severity of mental diseases. Examples for violent and less violent attempts are provided in the info button.

With the exception of age, no mandatory information is required in this section.



The screenshot shows the 'General' section of the form. It contains three fields: 'Current age' with a text input containing '40' and a 'Years' label; 'Suicide attempt' with a dropdown menu currently showing '(None)'; and 'Date of last attempt (Date; MMYYYY or YYYY)' with an empty text input.

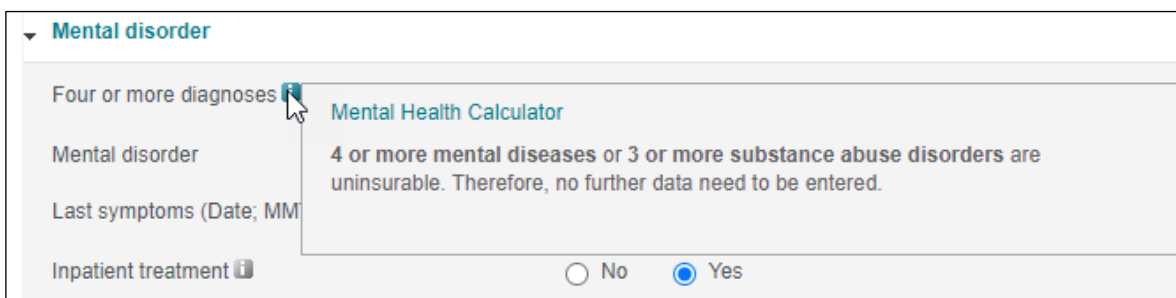


This screenshot is similar to the previous one, but the 'Suicide attempt' dropdown menu is open, showing a list of options: '(None)', 'One violent attempt', 'One less violent attempt', 'One unknown attempt', and 'More than one attempt'. The 'Mental disorder' section is partially visible below.

Section 2 - Mental illness

In the section "Mental Disorders", a total of three different illnesses can be selected. By default, only the input mask of the first mental disorder is opened. If there is a need to enter more, the other sections can be expanded.

If four or more diagnoses are present, this can be stated immediately at the top of the section and no further assessment is necessary as no cover is possible under these circumstances.



The screenshot shows the 'Mental disorder' section. A tooltip is displayed over the 'Four or more diagnoses' field, containing the text: 'Mental Health Calculator' and '4 or more mental diseases or 3 or more substance abuse disorders are uninsurable. Therefore, no further data need to be entered.' Below the tooltip, there are radio buttons for 'No' and 'Yes', with 'Yes' selected.

In the case of entering less than four diagnoses, the information in the individual sections can each be entered independently. This is important because, for example, "incapacity to work in the last 12 months" refers to the specified illness and does not apply generally to all. In case of ambiguities, the information icons provide you with the necessary help text with regards to the entries as shown by the red arrow.

▼ **Mental disorder**

Four or more diagnoses ⓘ No Yes

Mental disorder

Last symptoms (Date; MMYYYY or YYYY)

Inpatient treatment ⓘ No Yes

Current medication ⓘ

Counselling ⓘ

Time off work within the last 12 months ⓘ

Once a psychiatric diagnosis has been selected, the entries on the left hand side in this section are mandatory whilst it should be noted that the prognostic factors on the right hand side are not mandatory. If you forget to select an entry, the calculator will inform you before it continues to the results page as shown in the screenshot below.

▼ **Mental disorder**

Four or more diagnoses ⓘ No Yes

Mental disorder

Last symptoms (Date; MMYYYY or YYYY)

⚠ Please enter date

Section 3 - Risk factors

For risk factors, also three entries are possible. Risk factors are assessed independently from mental disorders, except for burnout. As burnout is not listed as an F-diagnosis under ICD-10, this diagnosis cannot be found under the mental disorders in the calculator, however in the background it is handled like one due to the severity of the diagnosis. This also includes that burnout is considered for comorbidities.

▼ **Risk factors**

Risk factor

Last occurrence (Date; MMYYYY or YYYY)

Further examination planned No Yes

The screenshot shows a form titled "Risk factors" with three main input fields on the left: "Risk factor", "Last occurrence (Date; MMYYYY or YYYY)", and "Further examination planned". A dropdown menu is open on the right, listing several risk factors: "Bullying", "Burnout", "Counselling without diagnosed mental disease", "Frequent doctor visits", "Lack of concentration", "Sleep disturbance", "Stress (work overload, job dissatisfaction, etc.)", and "Tingling".

On the left hand side of the input field are the general details to be inputted for all risk factors. On the right hand side are additional input fields which are only to be used if sleeping disorders or counselling without diagnosed disease are selected. If entries were made here by mistake and were provided although not required, they will simply not be taken into account. However, if the Risk Factor is sleeping disorders or counselling without diagnosed disease and there is no information inputted into the fields on the right hand side, an error message will be generated as per the below screenshot.

This screenshot shows the "Risk factors" form with a red arrow pointing to the right-hand side fields. The fields are: "Frequency of symptoms (sleep disturbance)" with a dropdown menu set to "(Please select)"; "Current Medication for sleep disturbance" with a dropdown menu set to "(Please select)"; and "For Counselling without diagnosed disease" with radio buttons for "≤ 5 sessions" and "> 5 sessions".

The screenshot shows a close-up of the "Frequency of symptoms (sleep disturbance)" field. The dropdown menu is set to "(Please select)". Below the field, there is a red warning icon and the text "Please select" in red.

Section 4 - Dependency disorders

Drugs

In the section "Dependency disorders", a total of two different disorders can be entered. For three or more dependencies cover cannot be offered.

Like in the previous sections, there is mandatory fields to be completed on the left hand side of the input field. Optional additional entries are on the right hand side and the fields to be completed are dependent on the dependency disorder selected.

The dependency disorder description (for example cannabis or cocaine) will provide a description of what additional entries are required to be filled out on the right hand side of the input field.

Dependency disorder	
Dependency disorder	<input type="text"/>
Date of last use (Date; MMYYYY or YYYY) ⓘ	<input type="text"/>
Treatment ⓘ	<input type="radio"/> No <input type="radio"/> Yes
Time off work within the last 12 months ⓘ	<input type="text" value="(Please select)"/>
Current cannabis intake in case of cannabis use disorder	<input type="text" value="(Please select)"/>
Prescription for cannabis, opiates, sedatives	<input type="radio"/> No <input type="radio"/> Yes
Route of administration for use of amphetamines, cocaine, hallucinogens or opiates	<input type="radio"/> Intravenous <input type="radio"/> Non-intravenous
Hepatitis B and C serology and HIV Test	<input type="text" value="(Please select)"/>
Prognostic factor for gambling disorder	<input type="text" value="(None)"/>

Alcohol abuse

Due to the information required to assess alcohol abuse, this section is listed separately in the calculator.

Alcohol use	
Medical or personal concerns about alcohol consumption	<input type="radio"/> No <input type="radio"/> Yes
Criteria for dependency fulfilled ⓘ	<input type="radio"/> No <input type="radio"/> Yes
Alcohol intake ⓘ	<input type="text" value="(Please select)"/>
Abstinent / reduced intake since (Date; MMYYYY or YYYY)	<input type="text"/>
Normal Gamma-GT ⓘ	<input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown
Sequelae ⓘ	<input type="radio"/> No <input type="radio"/> Yes

Here too, help texts provide guidance on how to fill in the form correctly, for example for "criteria for dependence fulfilled" or alcohol consumption.

Alcohol use

Medical or personal concerns about alcohol consumption No Yes

Criteria for dependency fulfilled [Mental Health Calculator](#)

Alcohol intake ⓘ

Abstinent / reduced intake since (MMYYYY or YYYY)

Normal Gamma-GT ⓘ

Sequelae ⓘ

Functional disorders

- ▶ Back pain
- ▶ Chronic fatigue syndrome
- ▶ Fibromyalgia
- ▶ Headache
- ▶ Heartburn

Social drinking

- No medical and no personal concerns about alcohol consumption

Harmful drinking

- Medical or personal concerns about alcohol consumption present but
- Criteria for dependency not fulfilled

Dependency

Drinking behaviour that can no longer be controlled voluntarily, the following are usually indicative:

- Terms such as "Alcoholism", "delirium" or "alcoholic disease" a
- ...

» Read more

Alcohol intake ⓘ

Abstinent / reduced intake since (Date; MMYYYY or YYYY)

Normal Gamma-GT ⓘ

(Please select)

(Please select)

Abstinent

Reduced intake <150 g per week

Reduced intake 150-350 g per week

Intake > 350 g per week

Alcohol intake ⓘ [Mental Health Calculator](#)

Abstinent / reduced intake since (Date; MMYYYY or YYYY)

Normal Gamma-GT ⓘ

Sequelae ⓘ

Examples of alcohol quantities

- 150gr alcohol ~ 3,75 litre beer/week ~ 0,5 litre beer/day
- 150gr alcohol ~ 1,34 litre wine ~ 0,2 litre wine/day

Section 5 - Functional disorders

Section 5 lists the most common mental health-related functional disorders. The main difference to the previous sections is that each functional disorder is listed individually. This is necessary as the calculator takes into account both the mental and somatic components of the respective functional disorder in order to provide the most accurate risk assessment possible. Furthermore, this allows the underwriter to fully assess the risk using the MHC without the necessity of having to look up additional MIRA rating pages.

As each functional disorder requires specific input fields, they cannot be simply summarised within one section. All disorders are therefore listed individually, but collapsed by default.

In this section, all corresponding entries are relevant for an accurate assessment and therefore on the left hand side of the entry field.

Functional disorders
▶ Back pain
▶ Chronic fatigue syndrome
▶ Fibromyalgia
▶ Headache
▶ Heartburn
▶ Heart palpitations
▶ Hyperventilation
▶ Irritable bowel syndrome
▶ Medically unexplained symptoms
▶ Syncope
▶ Tinnitus
▶ Vertigo

Functional disorders
▼ Back pain
Classification <input type="text"/>
Last symptoms (Date; MMYYYY or YYYY) <input type="text"/>
Time off work within the last 3 years <input type="text" value="(Please select)"/>
Inpatient treatment <input type="radio"/> No <input type="radio"/> Yes
Current medication <input type="text" value="(Please select)"/>
Occupation with specific risk factor <input type="radio"/> No <input type="radio"/> Yes
▼ Chronic fatigue syndrome
Last symptoms (Date; MMYYYY or YYYY) <input type="text"/>

3 Special functionalities of the calculator

For details and information on the functionalities of the calculator as well as studies that were conducted to support the MHC, please refer to the MIRA Risk Review Paper ‘Mental Health Calculator’.

Below however is a summary:

Comorbidities

The Mental Health Calculator is a holistic approach that closes a gap in the application process. Until now, it was not possible to correlate several mental illnesses and to assess them in a risk-adequate and fair way. Not every combination of mental illnesses can be assessed by just adding the risks; instead, there are combinations that are potentially more severe than their sum and other combinations in turn have a lower risk. The calculator has therefore been designed with special comorbidity matrices at a product level that cover all possible combinations of comorbid risk. In order to ensure maximum transparency for the underwriter, the rates stored on the individual rating pages and the rates determined via the comorbidity matrix are displayed separately on the results page.

Mental illness and functional disorders

Mental illnesses are often accompanied by functional disorders that are directly related. Because the functional disorders listed here all have a direct relationship to the development or severity of mental illness, the rates are divided into two components: A somatic component, which is also shown on the MIRA rate pages, and a mental component, which covers the risk of relapse, worsening, or development of a new mental illness. Yet, the increased risk depends on the temporal context and the evaluation of the potentially increased risk refers only to the mental rate component of the functional disorder. That is to say:

If the last symptoms of a functional disorder were more recent than those of the mental disorder, the risk for a recurrence of the mental disorder is higher. In this case, the additional mental disorder rating component of the functional disorder is taken into account. Where the opposite is true and the last symptoms of a functional disorder are not more recent than the mental disorder symptoms, there is no additional risk and therefore no additional rating required. However, the somatic rate is always given independently of the mental component according to the most recent respective MIRA rating page.

The final ratings can be viewed on the results page and is broken down individually for full transparency.

Increased risk in the absence of mental illness

Everything is possible, nothing is necessary. The Mental Health Calculator is designed in such a way that an accurate rating is provided no matter how much, or little information is provided. However, the calculator can also be used if there is no mental diagnosis, but the underwriter finds indications of an increased risk in the application. At a certain threshold of risk factors and functional disorders, a warning is given to consider a mental exclusion clause. These recommendations are displayed together with the rates on the results page.

4 Results page

An example of a simple results page with exact and rounded rates

The results page is intended to provide full transparency about our final rate calculation. In the upper lines, the most important inputs are displayed again, which are also transferred to the Risk Synopsis together with all other inputs.

Below are examples of calculations of ratings for all individual diagnoses as well as their aggregation. In our examples below, we have two mental illnesses each. The first one is a combination of a depression + post-traumatic stress disorder, the other depression + obsessive-compulsive disorder. For all mental illnesses, a separately calculated rate is shown, which is aggregated in the next step (Subtotal Mental Health Rating). Then the comorbidity risk is taken into account (subtotal rate incl. comorbidity weighting). In example 1, the total rate is lower than the aggregation, in the second example it is higher due to the increased risk of this combination.

In a final step, the comorbidity-adjusted total rate is rounded to provide the total mental health rating.

MENTAL HEALTH CALCULATOR		RESULTS																
Age	Suicide attempt	Date	Diagnoses > 3	Addictions > 3	Mental disorder	Last symptoms (years)	Severity Diagnosis 1	Second mental disorder	Second mental disorder	Last symptoms (years)	Severity Diagnosis 2							
40	(None)		No	No	Depression	2	mild	PTSD	Post-traumatic stress disorder	3	mild							
overview																		
	Life	CI	CI ext.	CI Cancer only	ADB	TPD own	TPD any	WP	Acc. Dis.	IP 4	IP 13	IP 26	BU Germany	EU Germany	GF Germany	RI France	EA Netherlands	LTC
Depression	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10
Post-traumatic stress disorder	100	10						100 + Excl ¹	100	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	Excl ²	100 + Excl ¹	10	50
Subtotal Mental Health Rating	125							150 + Excl ¹	100	150 + Excl ¹	150 + Excl ¹	150 + Excl ¹	150 + Excl ¹	150 + Excl ¹	25 + Excl ²	150 + Excl ¹	10	60
Subtotal Mental Health Rating (incl. comorbidity factor)	100							100 + Excl ¹	100	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	25 + Excl ²	100 + Excl ¹	10	50
Subtotal Somatic Rating	0	0						0	0	0	0	0	0	0	0	0	0	0
Total Rating (exact)	100	10	10 + Excl ¹	0	100	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	25 + Excl ²	100 + Excl ¹	10	50
Total Rating (rounded)	100	0	Excl ¹	0	100	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	25 + Excl ²	100 + Excl ¹	0	50

Remarks and Exclusions
No claim shall be admitted in respect of any disease, disability, disorder, injury, any operation, or treatment, whether directly or indirectly caused by mental disorders. However, neurologic diseases (e.g. Parkinson's disease) or dementia are covered if occurring after the insurance cover has commenced.

ATTENTION: Exclusion clauses for mental diseases, back pain and malignant tumours cannot be combined. It is recommended to decline coverage if such combinations occur.
When assessing the loss of one or more insured basic abilities, the following are not taken into account: ... (name of the disease/dysfunction) including all consequences. There is no insurance cover for this.
If necessary, the following addition can be made: If the following illnesses/dysfunctions occur after the start of the insurance cover ... (concrete clinical picture, e.g. spinal column, knee arthritis), insurance cover is provided.
A combination of more than 2 exclusion clauses leads to rejection.

MENTAL HEALTH CALCULATOR		RESULTS																		
Age	Suicide attempt	Date	Diagnoses > 3	Addictions > 3	Mental disorder	Last symptoms (years)	Severity Diagnosis 1	Second mental disorder	Second mental disorder	Last symptoms (years)	Severity Diagnosis 2	Risk factor	Last symptoms (years)							
40	(None)		No	No	Depression	2	mild	OCD	Obsessive-compulsive disorder	3	mild	Sleep disturbance	3							
overview																				
	Life	CI	CI ext.	CI Cancer only	ADB	TPD own	TPD any	WP	Acc. Dis.	IP 4	IP 13	IP 26	BU Germany	EU Germany	GF Germany	RI France	EA Netherlands	LTC		
Depression	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50	
Obsessive-compulsive disorder	75	0						Excl ¹	0	Excl ¹	Excl ¹	Excl ¹	Excl ¹	Excl ¹	0	Excl ¹	0	35		
Sleep disturbance	0	0						0	0	0	0	0	0	0	0	0	0	0	0	
Subtotal Mental Health Rating	100							50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	45	50	
Subtotal Mental Health Rating (incl. comorbidity factor)	150							125 + Excl ¹	0	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	25	125 + Excl ¹	0	45	50	
Subtotal Somatic Rating	0	0						0	0	0	0	0	0	0	0	0	0	0	0	
Total Rating (exact)	150	0	Excl ¹	0	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	0	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	25	125 + Excl ¹	0	45	50	
Total Rating (rounded)	150	0	Excl ¹	0	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	0	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	25	125 + Excl ¹	0	45	50	

Remarks and Exclusions
No claim shall be admitted in respect of any disease, disability, disorder, injury, any operation, or treatment, whether directly or indirectly caused by mental disorders. However, neurologic diseases (e.g. Parkinson's disease) or dementia are covered if occurring after the insurance cover has commenced.

ATTENTION: Exclusion clauses for mental diseases, back pain and malignant tumours cannot be combined. It is recommended to decline coverage if such combinations occur.

Example of the special rule: chronological order of symptoms

The timing of diagnoses and risk factors or functional disorders can play a role for risk assessment. In our example below, the last symptoms of heartburn occurred after the last symptoms of the mental illness (1st example) and once before (2nd example). When the symptoms of heartburn occur after, the risk is significantly increased and therefore the rating is added, whereas in the 2nd example, it is not increased and therefore not added.

Mental Health Calculator		RESULTS																			
Age	Suicide attempt	Date	Diagnoses > 3	Addictions ≥ 3	Mental disorder	Last symptoms (years)	Severity Diagnosis 1														
40	(None)		No		Depression	2	mild														
							Heartburn Years	1													
							Heartburn Years	2													
	Life	CI	CI excl.	CI Cancer only	ADB	TPD own	TPD any	WP	Acc. Dis.	IP 4	IP 13	IP 26	BU Germany	EU Germany	GF Germany	RI France	EA Netherlands	LTC	Hospital Cash	Surgery	
Depression	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50 + Excl ¹	0	
Heartburn mental	0	0	0	0	0	5	5	5	0	5	5	5	5	5	5	5	5	0	10	50 + Excl ¹	0
Heartburn somatic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	50 + Excl ¹	0
Subtotal Mental Health Rating	25	0	Excl ¹	0	0	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	0	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	25	55 + Excl ¹	0	10	55 + Excl ¹	0	
Subtotal Mental Health Rating (incl. comorbidity factor)	25	0	Excl ¹	0	0	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	0	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	25	55 + Excl ¹	0	10	55 + Excl ¹	0	
Subtotal Somatic Rating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	50 + Excl ¹	0
Total Rating (exact)	25	0	Excl ¹	0	0	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	0	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	55 + Excl ¹	25	55 + Excl ¹	0	10	55 + Excl ¹	0	
Total Rating (rounded)	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50 + Excl ¹	0	

Symptoms for heartburn are more recent than symptoms of mental illness

Mental Health Calculator		RESULTS																			
Age	Suicide attempt	Date	Diagnoses > 3	Addictions ≥ 3	Mental disorder	Last symptoms (years)	Severity Diagnosis 1														
40	(None)		No		Depression	1	mild														
							Heartburn Years	2													
							Heartburn Years	1													
	Life	CI	CI excl.	CI Cancer only	ADB	TPD own	TPD any	WP	Acc. Dis.	IP 4	IP 13	IP 26	BU Germany	EU Germany	GF Germany	RI France	EA Netherlands	LTC	Hospital Cash	Surgery	
Depression	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50 + Excl ¹	0	
Heartburn mental	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	50 + Excl ¹	0
Heartburn somatic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	50 + Excl ¹	0
Subtotal Mental Health Rating	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50 + Excl ¹	0	
Subtotal Mental Health Rating (incl. comorbidity factor)	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50 + Excl ¹	0	
Subtotal Somatic Rating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	50 + Excl ¹	0
Total Rating (exact)	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50 + Excl ¹	0	
Total Rating (rounded)	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50 + Excl ¹	0	

Symptoms for heartburn are less recent than symptoms of mental illness

Example functional disease

In the case of functional disorders, a somatic rate is provided in addition to the mental rate component. For each functional disorder, separate ratings are calculated for the mental component and the somatic condition. These separate ratings are then aggregated to the intermediate results and then rounded (via a comorbidity weighting for the mental illness rating) to a total rate.

In addition, a completely aggregated total rate as a combination of the separate mental illness and somatic rates is shown at the bottom.

Mental Health Calculator		RESULTS																			
Age	Suicide attempt	Date	Diagnoses > 3	Addictions ≥ 3	Mental disorder	Last symptoms (years)	Severity Diagnosis 1	Second mental disorder	Second mental disorder	Last symptoms (years)	Severity Diagnosis 2										
40	(None)		No		Depression	2	mild	PTSD	Post-traumatic stress disorder	3	mild										
							Headache Years			3											
							Headache Years			2											
	Life	CI	CI excl.	CI Cancer only	ADB	TPD own	TPD any	WP	Acc. Dis.	IP 4	IP 13	IP 26	BU Germany	EU Germany	GF Germany	RI France	EA Netherlands	LTC	Hospital Cash	Surgery	
Depression	25	0	Excl ¹	0	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	0	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	50 + Excl ¹	25	50 + Excl ¹	0	10	50 + Excl ¹	0	
Post-traumatic stress disorder	100	10	10 + Excl ¹	0	100	100 + Excl ¹	100 + Excl ¹	100	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	100 + Excl ¹	Excl ²	100 + Excl ¹	10	50	100 + Excl ¹	0	
Headache mental	0	0	0	0	0	10	10	10	0	10	10	10	10	10	10	10	0	0	5	10	0
Headache somatic	0	0	0	0	0	5	5	5	0	5	5	5	5	5	5	5	0	0	5	10	0
Heartburn mental	0	0	0	0	0	5	5	5	0	5	5	5	5	5	5	5	0	0	5	10	0
Heartburn somatic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0
Subtotal Mental Health Rating	125	10	10 + Excl ¹	0	100	165 + Excl ¹	165 + Excl ¹	165 + Excl ¹	100	165 + Excl ¹	165 + Excl ¹	165 + Excl ¹	165 + Excl ¹	165 + Excl ¹	25 + Excl ²	165 + Excl ¹	10	65	165 + Excl ¹	0	
Subtotal Mental Health Rating (incl. comorbidity factor)	100	10	10 + Excl ¹	0	100	115 + Excl ¹	115 + Excl ¹	115 + Excl ¹	100	115 + Excl ¹	115 + Excl ¹	115 + Excl ¹	115 + Excl ¹	115 + Excl ¹	25 + Excl ²	115 + Excl ¹	10	55	115 + Excl ¹	0	
Subtotal Somatic Rating	0	0	0	0	0	25	25	25	0	25	25	25	25	25	0	0	0	0	0	10	0
Total Rating (exact)	100	10	10 + Excl ¹	0	100	115 + Excl ¹	115 + Excl ¹	115 + Excl ¹	125	115 + Excl ¹	140 + Excl ¹	140 + Excl ¹	140 + Excl ¹	140 + Excl ¹	115 + Excl ¹	115 + Excl ¹	10	55	115 + Excl ¹	0	
Total Rating (rounded)	100	0	Excl ¹	0	100	125 + Excl ¹	125 + Excl ¹	125 + Excl ¹	125	125 + Excl ¹	150 + Excl ¹	150 + Excl ¹	150 + Excl ¹	150 + Excl ¹	125 + Excl ¹	125 + Excl ¹	0	55	125 + Excl ¹	0	

Warning: Increased risk

Even if no mental diagnosis is present, an accumulation of risk factors and functional complaints can be an indication of a mental illness. In these cases, we explicitly point out the recommendation of an exclusion clause for mental illnesses on the results page, as can be seen in the screenshot.

MENTAL HEALTH CALCULATOR		RESULTS																			
Four or more functional disorders and risk factors were entered - Consider an exclusion clause for mental disorder for TPD any, TPD own, ADB, ITP, IP, BU, EU and GF.																					
Age	Suicide attempt	Date	Diagnoses > 3																		
40	(None)																				
		Additions > 3	Risk factor																		
		Headache Years	Frequent doctor visits																		
		0	1																		
			Last symptoms (years)																		
			Lack of concentration																		
			2																		
			Second risk factor																		
			Lack of concentration																		
			Last symptoms (years)																		
			2																		
			Hyperventilation Years																		
			3																		
Warning : increased risk																					
	Life	CI	CI ext.	CI Cancer only	ADB	TPD own	TPD any	WP	Acc. Dis.	IP 4	IP 13	IP 26	BU Germany	EU Germany	GF Germany	RI France	EA Netherlands	LTC	Hospital Cash	Surgery	
Frequent doctor visits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lack of concentration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Headache mental	0	0	0	0	0	10	10	10	0	10	10	10	10	10	0	10	0	5	10	0	0
Hyperventilation mental	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Migraine somatic	0	0	0	0	0	25	0	50	0	50	50	50	50	0	0	25	20	0	0	0	0
Hyperventilation somatic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal Mental Health Rating	0	0	0	0	0	10	10	10	0	10	10	10	10	10	0	10	0	5	10	0	0
Subtotal Mental Health Rating (incl. comorbidity factor)	0	0	0	0	0	10	10	10	0	10	10	10	10	10	0	10	0	5	10	0	0
Subtotal Somatic Rating	0	0	0	0	0	25	0	50	0	50	50	50	50	0	0	25	20	0	0	0	0
Total Rating (exact)	0	0	0	0	0	35	10	60	0	60	60	60	60	10	0	35	20	5	10	0	0
Total Rating (rounded)	0	0	0	0	0	25	0	60	0	60	60	60	60	0	0	25	25	5	0	0	0

5 FAQ

<p>Does using the MIRA rating pages for risk assessment of mental health conditions produce different results than using the MHC?</p>	<p>When UW only a single mental health condition, using the MIRA rating page is the right way to go. However, the moment, more than one mental health diagnosis is present or additional risk factors, drug abuse or functional disorders, only the calculator will produce the correct result for risk assessment. This is because, risks are over proportional compared to the mere addition of the risks, in other cases the overall risk may be lower. Therefore, whenever faced with more than one diagnosis using the MHC is the strongly preferred option.</p>
<p>Can I estimate only a single psychiatric disorder with the calculator?</p>	<p>The Mental Health Calculator can be used to enter and assess a single, but up to three psychiatric diagnoses. In addition, the MHC can be used even in the absence of a diagnosed mental health condition to assess only risk factors (such as sleep and concentration disorders) or functional disorders related to the development of a psychiatric disorder.</p>
<p>Can the calculator be used for risk assessment in the absence of a mental health condition disclosure?</p>	<p>The calculator contains a predictive function that contributes significantly to risk assessment even in the absence of a psychiatric diagnosis. If four or more risk factors or functional disorders are present that have a known link to mental health conditions, a warning is issued indicating to consider an exclusion clause for claims due to mental illness.</p>
<p>Which input fields are mandatory in the calculator and which ones are not?</p>	<p>The calculator is static and therefore all possible inputs have to be displayed. To clarify which input fields are mandatory and which are not, the view of the calculator has been split into two columns. As soon as an input is made within a section, all inputs on the left side are mandatory, the inputs on the right side depend on the diagnosis that was selected. For example, for the risk factor sleeping disorder, the entries about the frequency of symptoms and medication used are required, but not in the case for the input of other risk factors.</p>
<p>What should I do if not all required information is available?</p>	<p>In some cases, not all the information may be available. In principle, the MHC distinguishes between mandatory entries on the left and dependent entries on the right, depending on the selected condition. In some cases, the calculator offers "unknown" as a selection in mandatory input fields. This offers a possibility for using the calculator and getting an assessment even with some data missing. However, these inputs could contribute to a less accurate risk assessment and it should be considered if this information should be acquired. Examples in which "unknown" is allowed are the indication of incapacity for work in the last 12 months or whether counselling is carried out.</p>
<p>What is the difference between a prognostic and a risk factor?</p>	<p>Prognostic factors are used to better assess certain mental health conditions. For example, prognostic factors include indications of BMI, financial or employment status. These factors may play an important role in the assessment. For an eating disorder, a BMI of less than 15 is critical; for a buying and hoarding disorder, a poor financial situation or unemployment is important information for the assessment of the condition.</p> <p>Risk factors are assessed independently of psychiatric diagnoses. Risk factors include for instance sleeping disorders or burnout syndrome. Those factors themselves may result in a higher risk for a claim due to a mental health condition and are therefore considered in the MHC. Furthermore, risk factors can be used for assessment even in absence of a main psychiatric diagnosis.</p>
<p>Where can I see how long postponement will last for the respective products?</p>	<p>On the results page you will find an indication of the period for which the application should be postponed for each product. For example, the notice text may look like this:</p> <p>"For mental diagnosis rates: Deferral for Depression: 1 year for IP, TPD own, TPD any products."</p>
<p>Which data is the MHC based on?</p>	<p>The MHC is based on the evaluation of more than 100 publications and internal data analyses. The studies conducted by Munich Re are based on a data set of 4.7 million insurance policies and were evaluated using statistical methods.</p>

<p>Do I need to look up MIRA rating page, e.g., for functional conditions that are also being assessed in the calculator?</p>	<p>The calculator is designed so that MIRA rating pages do not have to be looked up.</p> <p>Instead, you will find a breakdown of somatic and mental disorder rates on the results page. Of course, this only applies if the functional disorder is also represented in the calculator (see list in the appendix). For functional disorders that are not part of the MHC, the respective MIRA rating pages must still be used for risk assessment.</p>
<p>How should I decide in the risk assessment if the clinical severity (e.g. mild depression) does not match the assessment in the calculator?</p>	<p>In principle, a distinction must be made between clinical and insurance medical severity levels. Clinically, for example, depression can be classified as moderate, but the insurance medical aspects necessary for the assessment classify it as mild (low risk). This scenario goes both ways. This is because the same criteria are not used for assessing insurability as for a clinical diagnosis. For the risk assessment, therefore, the assessment according to the insurance medical criteria essentially applies.</p>

6 Appendix

Table 1 - List of covered diseases in the Psyche Calculator 2022

Group	Disease
Mental illnesses	Agoraphobia
	Acute transient psychotic disorder
	Other anxiety disorder
	Other eating disorder (without anorexia)
	Anorexia nervosa
	Adjustment disorder
	Attention deficit syndrome
	Autism
	Autism with epilepsy (without retardation)
	Bipolar disorder
	Depression
	Dysthymia
	Generalised anxiety disorder
	Shopping addiction and compulsive hoarding
	Panic disorder
	Personality disorder
	Post-traumatic stress syndrome
	Schizoaffective disorder
	Schizophrenia
	Somatoform disorder
Social phobia	
Specific phobia	
Obsessive-compulsive disorder	
Cyclothymia	
Risk factors	Mobbing
	Talk therapy without a mental diagnosis
	Frequent visits to the doctor
	Concentration disorder
	Sleep disorder
	Stress (work overload)
	Burnout
Dependency disorders	Cannabis
	Opiates
	Amphetamines
	Cocaine
	Tranquilizers/Sedatives
	Solvent
	Laxative
	Performance enhancing drugs
	Hallucinogens
	Gambling addiction
	Internet addiction (without gambling addiction)
Concentration-enhancing drugs	
Functional diseases	Back pain
	Headache / migraine
	Stomach pain
	Hyperventilation
	Irritable bowel syndrome
	Syncope
	Tinnitus
	Dizziness
	Palpitations
	Medically unexplainable symptoms
	Chronic fatigue syndrome
	Fibromyalgia