UNDERSTANDING EUROPEAN PATIENT EXPECTATIONS TOWARDS CURRENT THERAPEUTIC DEVELOPMENT IN SPINAL MUSCULAR ATROPHY

A summary of the results from the EUPESMA-2019 survey

Content

01

EUPESMA-2019 SURVEY: OVERVIEW

SMA Europe have conducted a Europe-wide survey on the perspectives of people living with SMA*

Based on an extensive literature review, a first survey from 2015, and feedback from an SMA Europe representative group of expert patients and carers, **SMA Europe** developed the **EUPESMA-2019 survey**

26 countries† covering a total of **1,474 individuals** aged 0-81 years

Non-sitters (43.6%), **sitters** (43.1%) and **walkers** (13.2%)

Most of participants (69.1%) **did not require assisted ventilation**

People **with or without scoliosis** (56.4%) or **contractures**‡

*Survey responders included individuals living with SMA (52.6%) and their carers (47.2%); for younger individuals, the survey was completed by their carers. †The survey was distributed across 19 European member countries: Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, North Macedonia, The Netherlands, Poland, Romania, Russia, Serbia, Spain, Sweden, Switzerland, UK and Ukraine. Some of these organizations may also include members from other countries. ‡Overall contractures were most common in the knees (63.4%), followed by the hips (39.8%), elbows (32.2%), jaw (21.0%), wrists (19.1%), and shoulders (18.1%). Patients reporting 'other' contractures (18.0%) indicated these being in the hands, fingers, feet, and neck.

SMA, spinal muscular atrophy.

Gusset N et al. *Neuromuscular disorders: NMD* 2021. [Epub ahead of print].

The EUPESMA-2019 survey aimed to **understand the perspectives of those living with SMA and their carers** on treatment expectations, the realities of daily life and access to clinical trials and SMA therapies

How was the EUPESMA-2019 survey delivered?

The EUPESMA-2019 consisted of **44 questions divided into six categories**: demographics, education and employment, mobility and health status, SMA medical treatment, clinical trials, and well-being and expectations.

The survey was **translated into 16 languages** and distributed through **19 SMA Europe national member organisations**

The survey was **distributed via personal emails** preceded by preferred language selection, cover letter, and a consent-to-access questionnaire

Results were anonymous and could not be assigned to a specific participant. The survey **was not distributed on social media platforms** to ensure participation was specific to the SMA community*

*Data were collected and hosted by COGVIO. Partially completed questionnaires were not included in the analysis. Cross-analysis of responses was conducted after stratification.
SMA, spinal muscular atrophy.
Gusset N et al. *Neuromuscular disorders: NMD* 2021 [Epub ahead of print].

Overall, the EUPESMA-2019 survey highlighted that…

SMA type does **not reflect mobility level**, **severity of disease** or **its progression**

- A new consensus on the classification of SMA is needed

A **high unmet need** still **exists**

- Most participants did not have access to treatment
- There is a high demand for enrolment in clinical trials
- Most participants want to have access to combination therapies

Disease stabilisation is considered an **important treatment outcome**

- Reported by all ages, SMA types and mobility levels, and in both treated and untreated participants
- Treatment should focus on personalised treatment goals, regardless of disease stage

SMA, spinal muscular atrophy.

Gusset N et al. *Neuromuscular disorders: NMD.* 2021 [Epub ahead of print].

Despite recent advances in pharmacologic and non-pharmacologic interventions in SMA, there are still ongoing unmet therapeutic needs for those living with this disorder and their carers

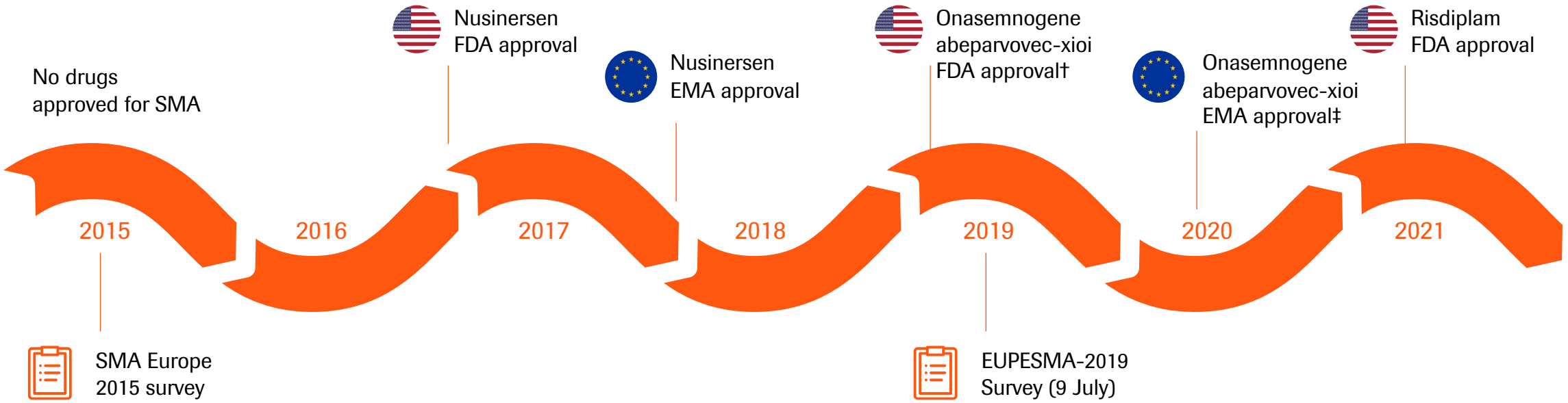
02

EUPESMA-2019 SURVEY RESULTS: ACCESS TO APPROVED TREATMENTS

What were the approved SMA treatments at the time of the EUPESMA-2019 survey?

Timeline for approved treatments in SMA:

TREATMENTS IN SMA



SMA EUROPE SURVEYS

*5q SMA in paediatric and adult patients with some variations in reimbursement across countries, e.g. for Type 1, 2, 3, 4 (excluding IV) and in some cases including age restrictions such as <18 years old. †In patients <2 years old. ‡Or have up to three copies of *SMN2*.

EMA, European Medicines Agency; FDA, U.S. Food and Drug Administration; SMA, spinal muscular atrophy; SMN, survival of motor neuron.

Gusset N et al. *Neuromuscular disorders: NMD.* 2021 [Epub ahead of print].

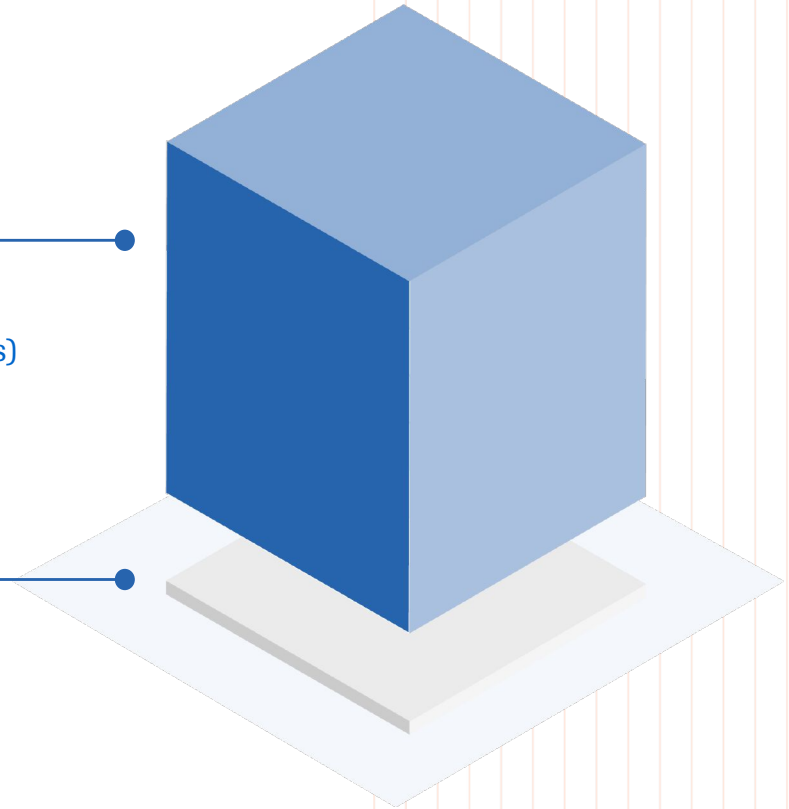
73.2% of participants were not receiving an approved treatment at the time of survey completion

69,3%

Of participants (of all age groups, SMA types and mobility levels) wanted treatment, but did not have access to it

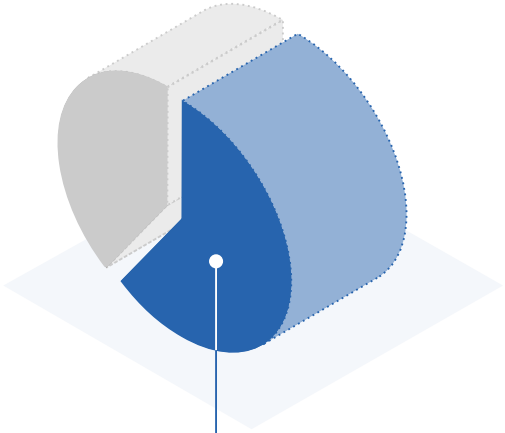
5,3%

Of participants did not want to receive treatment

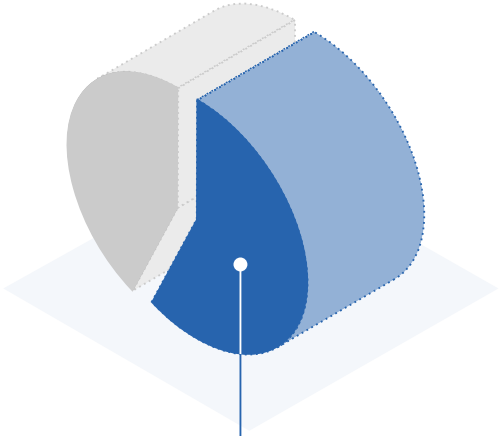


Insufficient access to the approved therapy resulted in mostly strong negative feelings

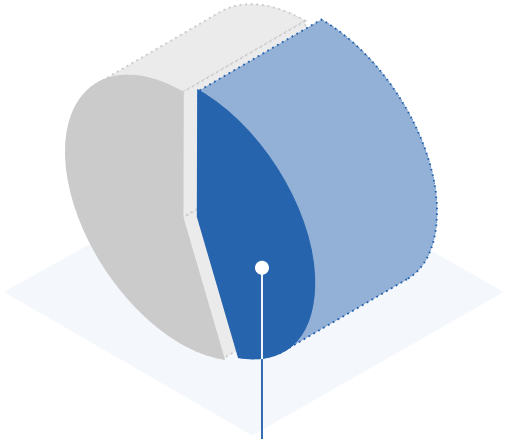
(including anger, frustration, helplessness, traumatisation, unfair treatment, and devastation)



59,6%
of participants
felt **helpless**



56,8%
of participants
felt **frustrated**

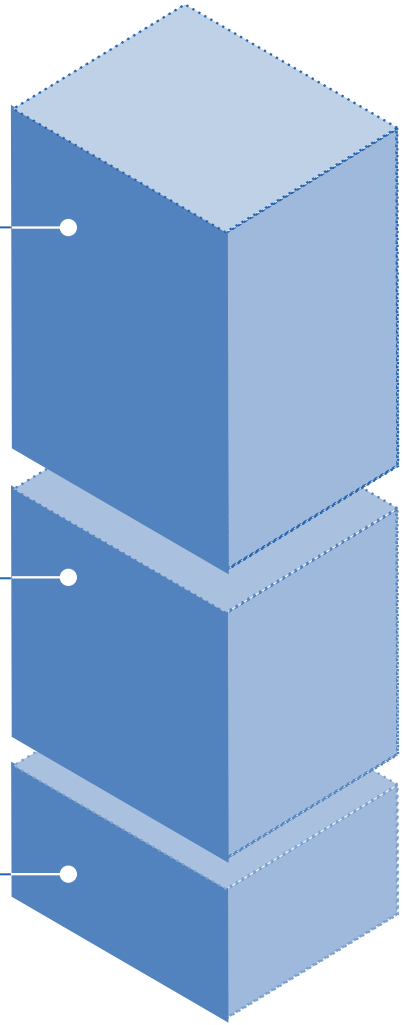


46,2%
of participants felt
unfairly untreated

SMA, spinal muscular atrophy.

Gusset N et al. *Neuromuscular disorders: NMD.* 2021 [Epub ahead of print].

For participants who had not received treatment…



35,6%

had no available treatment in their country

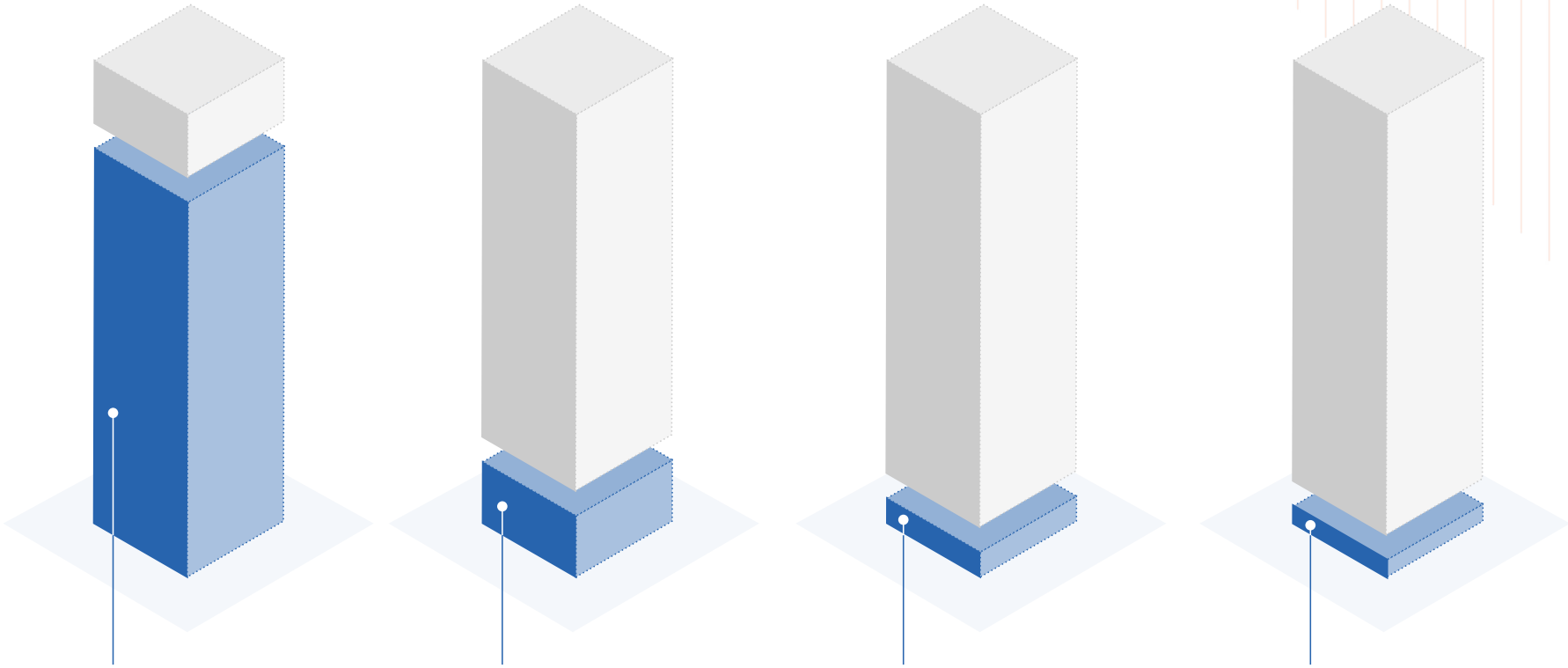
25,9%

did not have access to it, but the treatment was available

13,6%

had scoliosis or a spinal fusion, preventing treatment administration

Those who received treatment, accessed it through…



85,8%
Reimbursement

13,9%
Early access programmes

5,6%
Clinical trials

3,8%
Other means

03

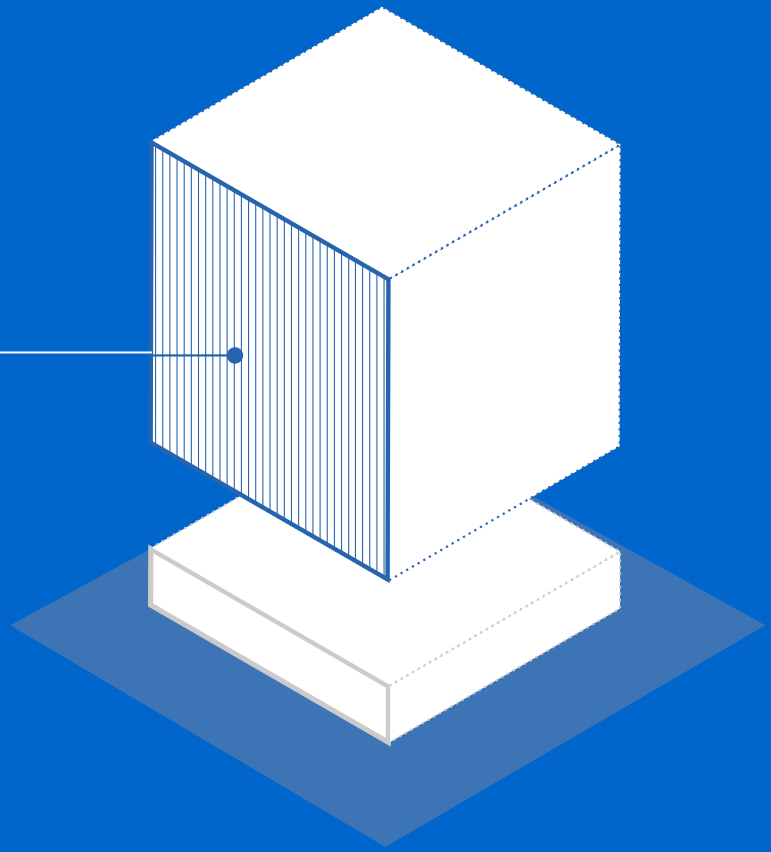
EUPESMA-2019 SURVEY RESULTS: EXPECTATIONS TOWARDS CLINICAL TRIALS

84.3% of participants expressed a high interest for clinical trial participation

A small but significantly higher proportion of interest was reported in the treated versus untreated population (87% versus 82%, respectively; p=0.025)

81,9%

of responses indicated strong negative feelings associated with not being eligible for a clinical trial



There is a high demand for enrolment in clinical trials from both treated and untreated individuals

Reasons for not participating in clinical trials included:

31,5%
No study sites in his/her country

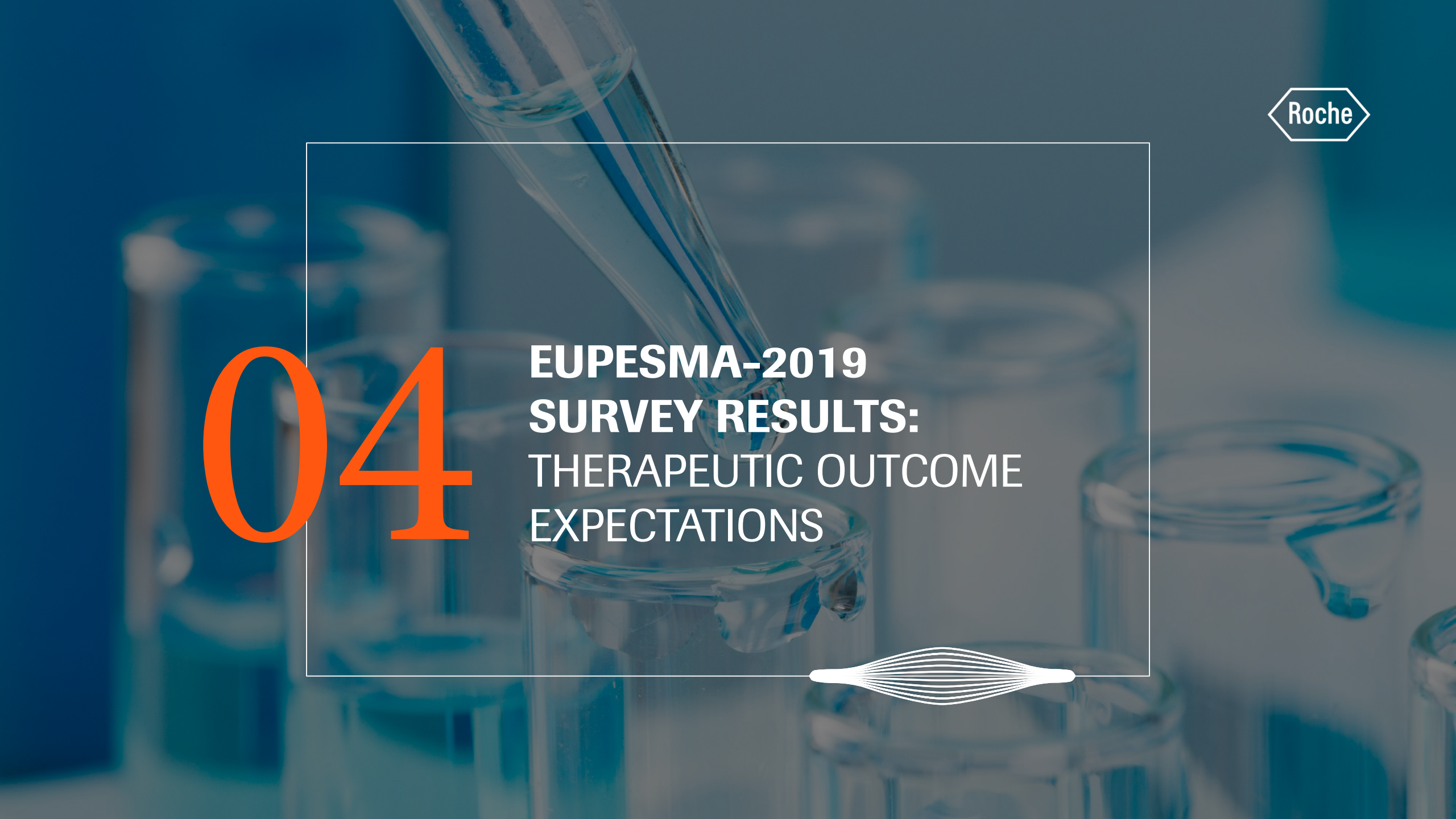
9,2%
Did not have the required level of motor function

5,8%
The clinical trial was already full

6,7%
Could not travel to the study site

28,5%
Their age did not meet the inclusion criteria

3,8%
Could not fit the study schedule around their life



04

EUPESMA-2019 SURVEY RESULTS: THERAPEUTIC OUTCOME EXPECTATIONS

96.6% of participants view disease stabilisation as progress

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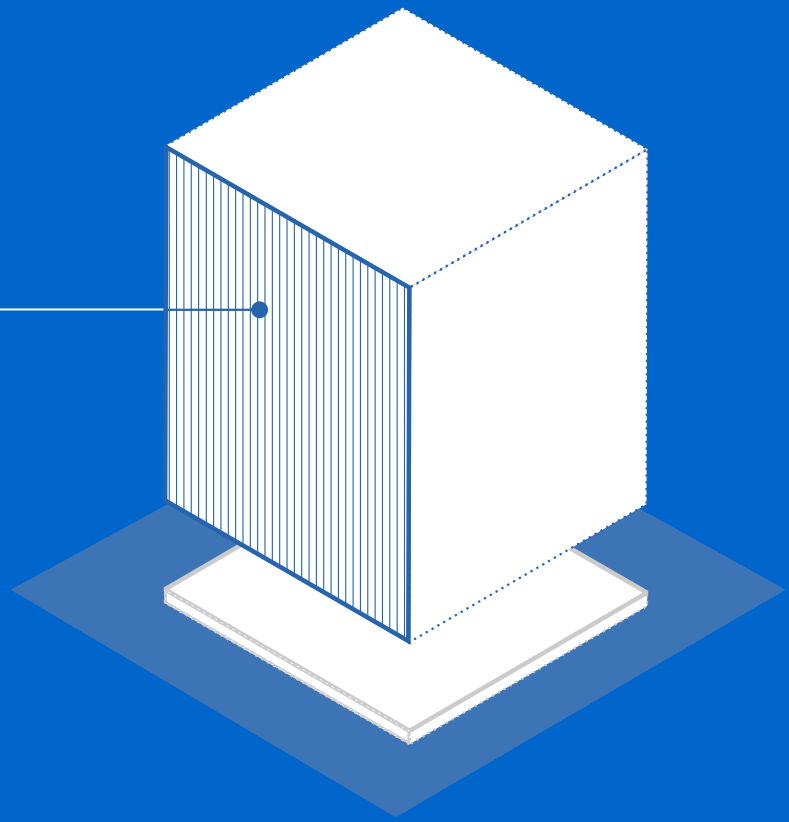
of participants view disease stabilisation as progress



Disease stabilisation was seen as progress across all ages, SMA types and mobility levels, and in both treated and untreated participants

Current **clinical trial designs** and their primary outcome measures **assume an improvement through treatment** and **neglect the concept that a stabilisation or a slowing of progression is also valuable** for individuals with SMA

Stabilisation is important and **meaningful change is relative to functional ability,** whereby small improvements in motor function **could have an important impact on quality of life**

When **evaluating responses to treatment, disease stabilisation** must be considered as a **meaningful change**

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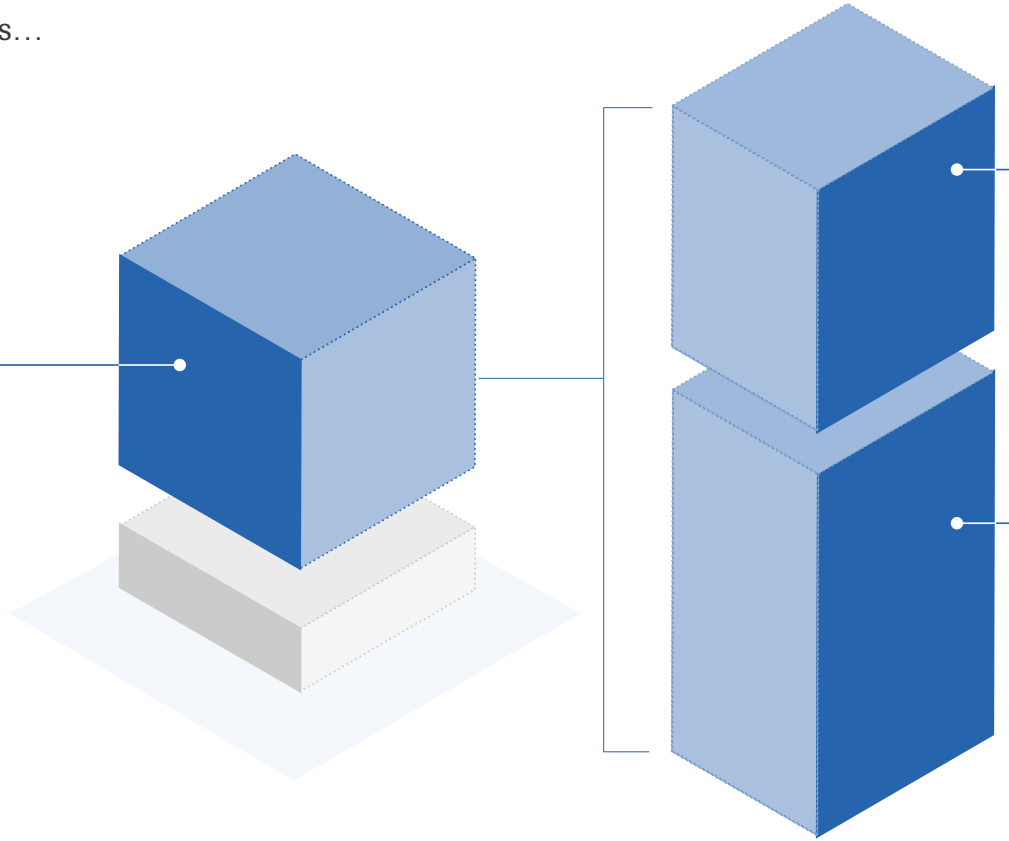
05

EUPESMA-2019 SURVEY RESULTS: EXPECTATIONS FOR DRUG TARGET AND ADMINISTRATION

77.0% of participants preferred combination therapy compared with monotherapy

When considering monotherapy treatments…



77%

of participants preferred combination therapy compared with monotherapy

40%

preferred a therapy that targets respiratory function

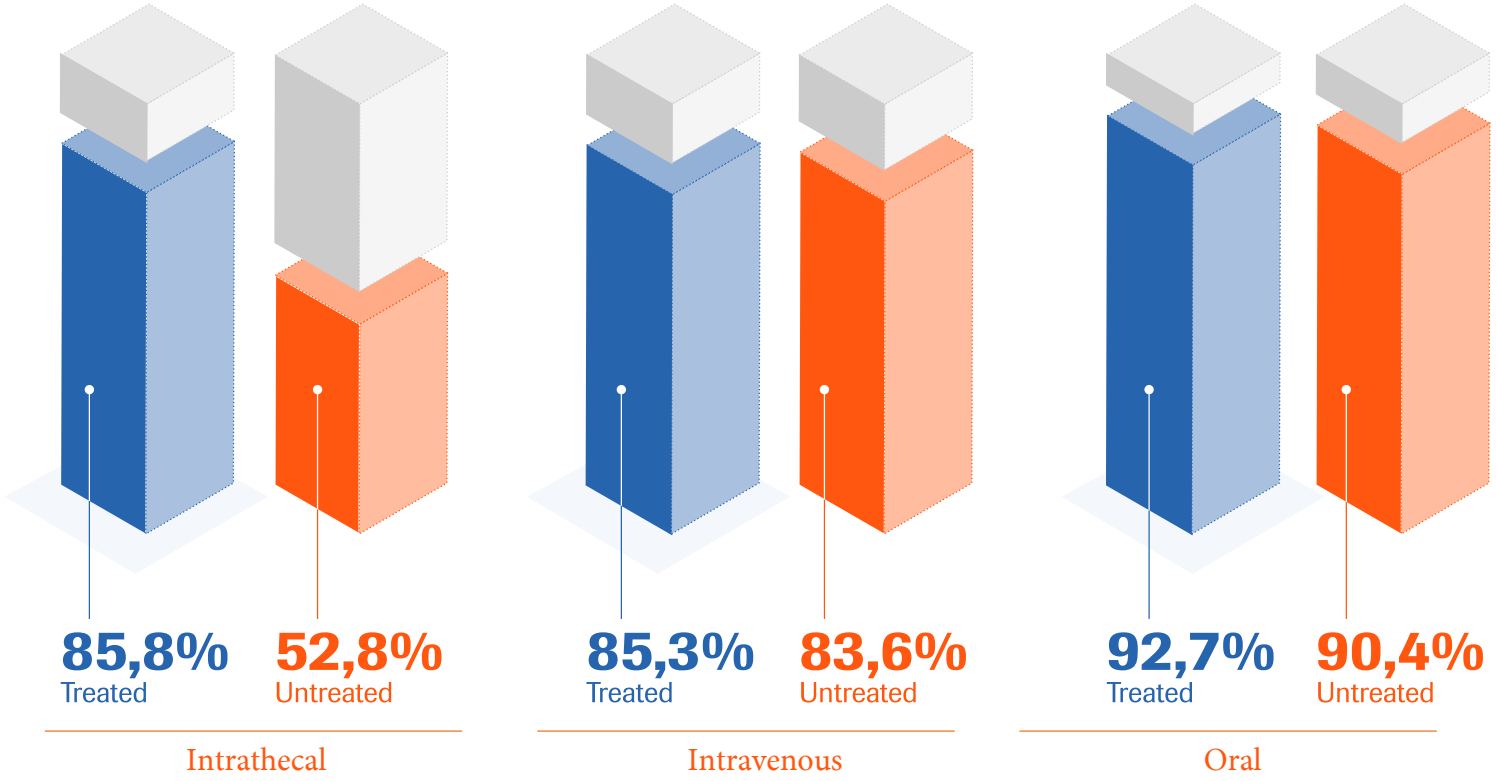
60%

preferred a therapy that targets the SMN1 gene, SMN2 gene splicing or muscle strength and capacity

SMA is considered a **multisystem disease;** therefore, treatment expectations focus on combination therapies that can tackle multiple targets

Treated participants were significantly more likely to accept intrathecal administration compared with untreated participants

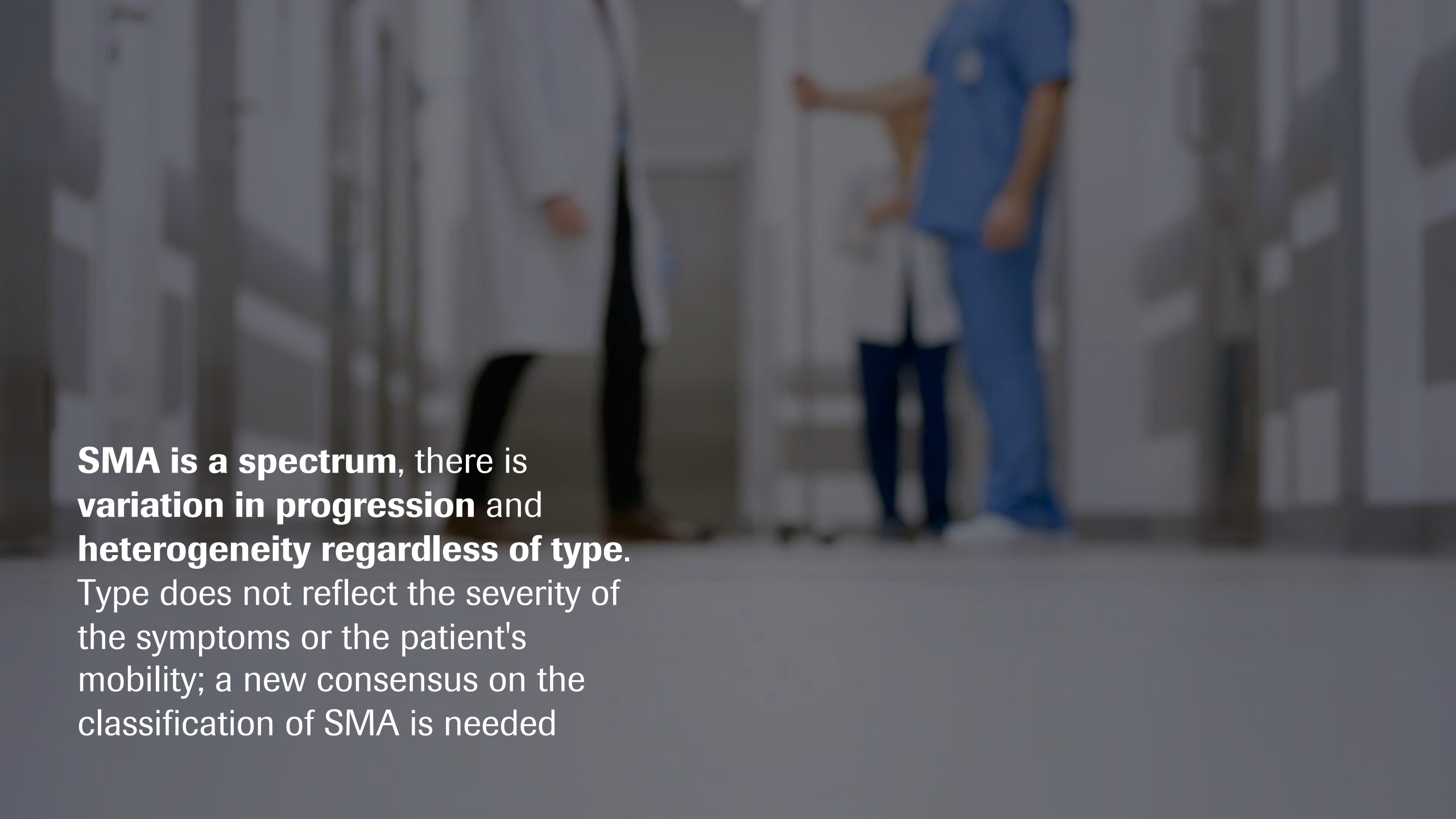
There was a significant difference in willingness to accept intrathecal administration between the treated and untreated groups



There was significantly more acceptance for less invasive and burdensome administration routes among participants who were untreated

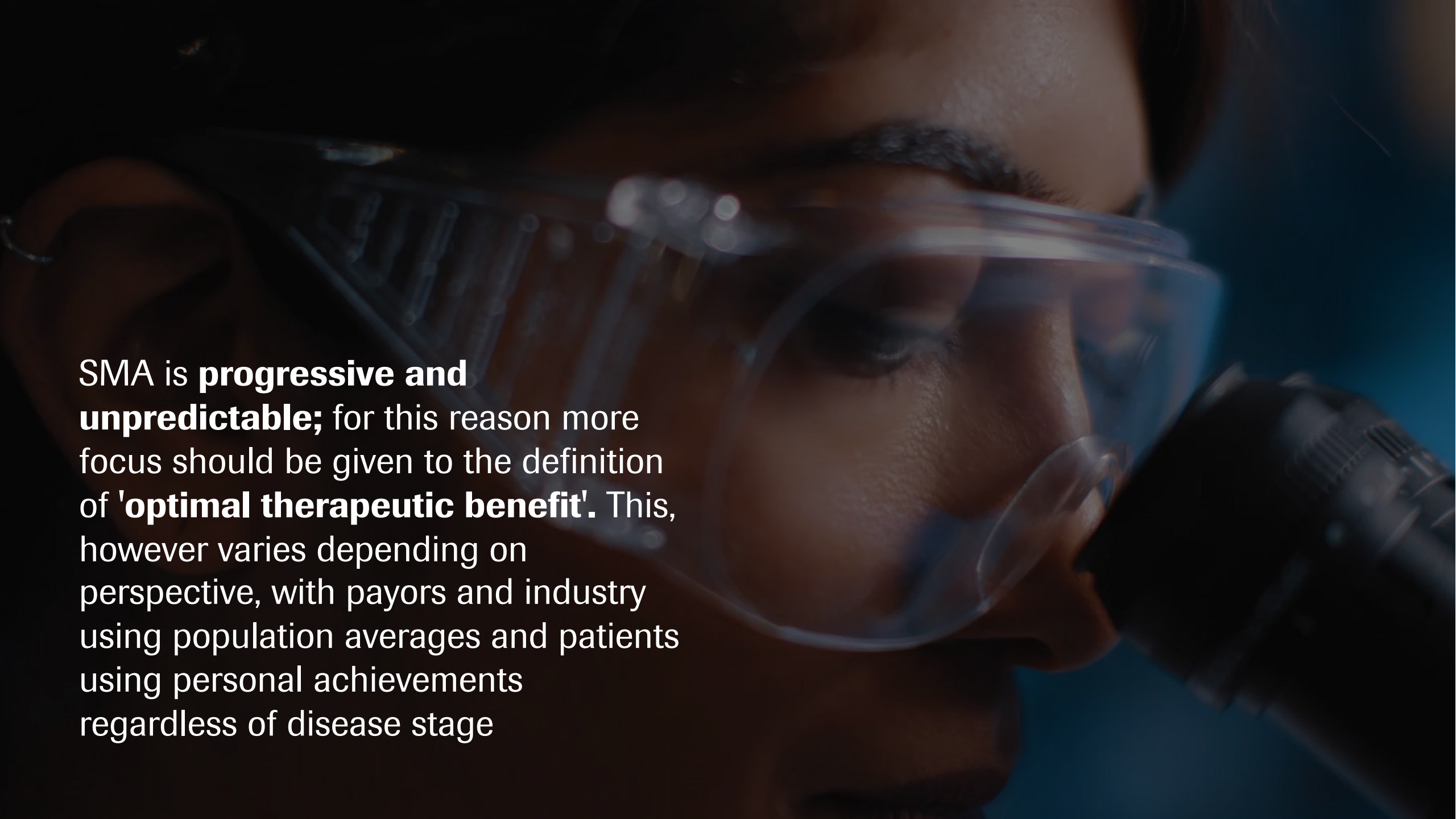
Acceptance for more burdensome procedures is likely if a compound is effective

06 TAKE-HOME MESSAGES

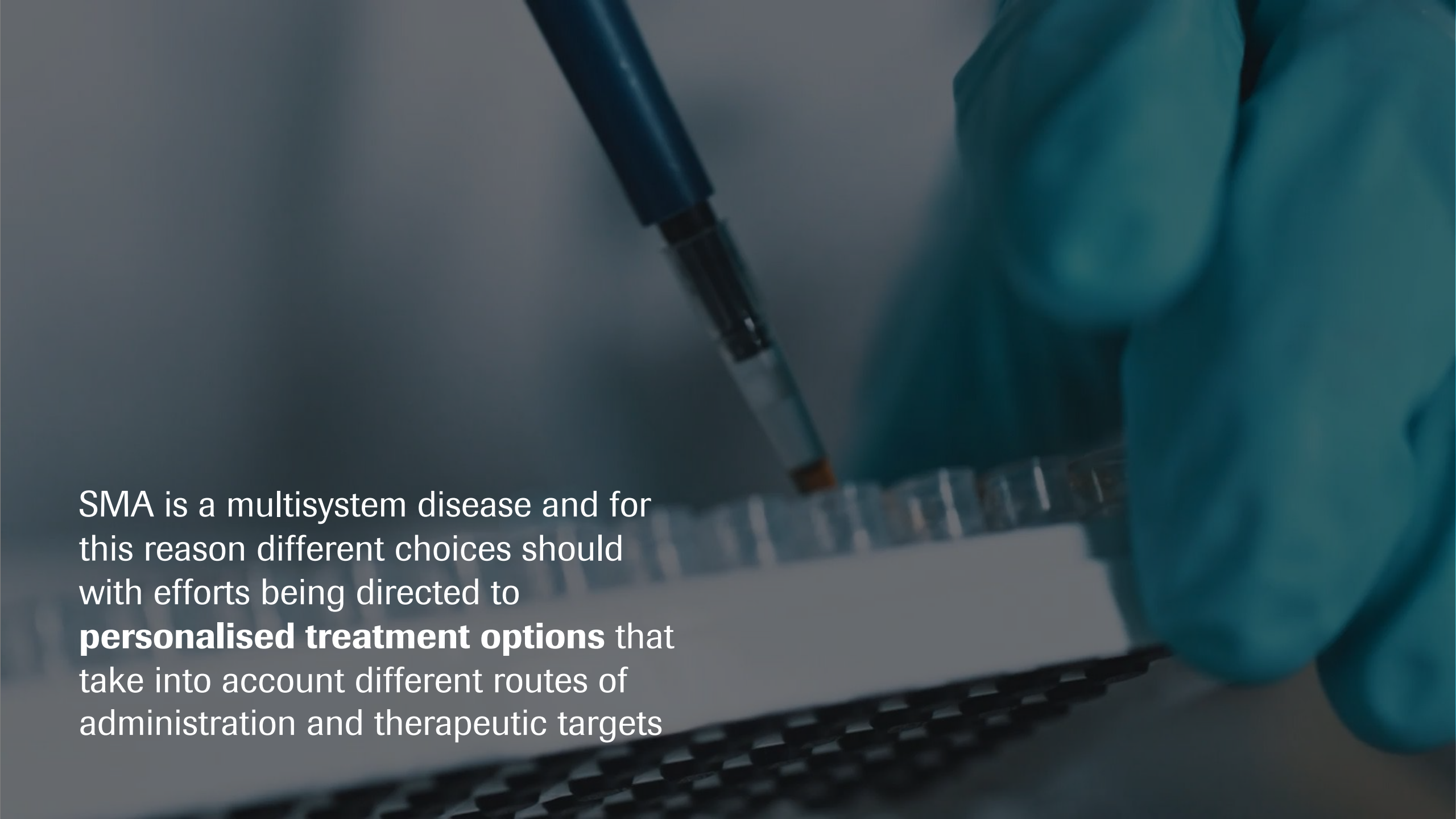


SMA is a spectrum, there is **variation in progression** and **heterogeneity regardless of type**. Type does not reflect the severity of the symptoms or the patient's mobility; a new consensus on the classification of SMA is needed

If the natural course of the disease is deterioration, **stabilisation and/or minor changes** in functional abilities are considered a **highly successful treatment effect/response and should be reflected within clinical trial measures**



SMA is **progressive and unpredictable;** for this reason more focus should be given to the definition of **'optimal therapeutic benefit'.** This, however varies depending on perspective, with payors and industry using population averages and patients using personal achievements regardless of disease stage



SMA is a multisystem disease and for this reason different choices should with efforts being directed to **personalised treatment options** that take into account different routes of administration and therapeutic targets

BACK-UP SLIDES

Treatment access by age group, SMA type and mobility level

	n	No access (%)	On treatment (%)
Participants who want access to a therapy	**1417**	**72.1**	**27.9**
Age (years)			
<2	58	55.2	44.8
2–5	229	48.9	51.1
6–11	251	59.8	40.2
12–17	148	70.3	29.7
18–25	155	84.5	15.5
26–40	274	81.0	19.0
>40	302	89.7	10.3
SMA type			
Type 1	237	55.3	44.7
Type 2	649	73.0	27.0
Type 3	498	77.1	22.9
Type 4	33	100.0	0.0
Mobility level			
Non-sitter	606	77.2	22.8
Sitter	620	68.9	31.1
Walker	191	66.5	33.5

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