

Conducting clinical trials in France on Angelman Syndrome

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Presentation of the Angelman Community in France

This infographic was done by the 3 national associations representing families affected by Angelman Syndrome. The goals are :

- 1) to provide the clearest possible information to laboratories and biotechnologies to facilitate the conduction of clinical trials in France
- 2) to present the Angelman community in France following the completion of a questionnaire with 154 respondents.

It is possible to conduct clinical trials on
Angelman Syndrome in France
because.....

✓ Because patients are represented by national associations



People with Angelman Syndrome are represented by **3 associations in France**



<https://www.angelman-afsa.org/>



<https://www.fastfrance.org/>



<https://syndromeangelman-france.org/>



✓ Because patients benefit from follow-ups in expert health care networks



<https://www.defiscience.fr>



<https://www.anddi-rares.org>

Most of them benefit from medical follow-ups within a **rare disease health network**

One of the missions of the rare diseases health network is to **ensure the coordination of fundamental, translational, clinical and organizational research** : mapping of databases, laboratories, research projects , diagnostic and therapeutic innovations, support for calls for rare disease proposals. In particular, they rely on Clinical Investigation Centers (CIC) which are clinical research infrastructures made available to investigators and researchers within hospitals to carry out research projects in dedicated premises and with specific staff. Projects may aim to better understand the disease or even evaluate new treatments.



✓ Because clinical research is supported in France by dedicated networks



<https://ecrin.org/>

Public, non-profit organization that links scientific partners and networks across Europe to facilitate multinational clinical research



<https://fcrin.org/>

National clinical research infrastructure. Approved by the French National Research Agency as part of the Investments for the Future programs, its mission is to strengthen the performance of French clinical research and its attractiveness at the European and international level.

France, through its network of family associations and its organization into rare disease health networks, themselves linked to national or European infrastructures, is able to carry out clinical trials on Angelman syndrome, whatever its nature.

✓ French Angelman Syndrome Community



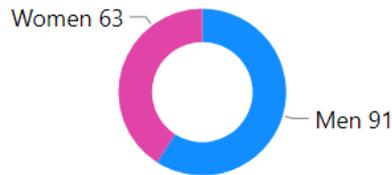
1250 people estimated with AS in France [1]

A survey was conducted on a significant sample with the help of 3 French parent associations (AFSA [2], FAST France [3], Syndrome Angelman-France [4]). You will find below the output which covers different topics : location, diagnosis, medical and paramedical check-up, impact on family life, perspectives.

✓ Demographics

Number of answers
154

Distribution per gender



Distribution per age range

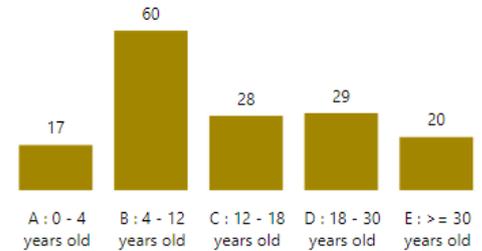
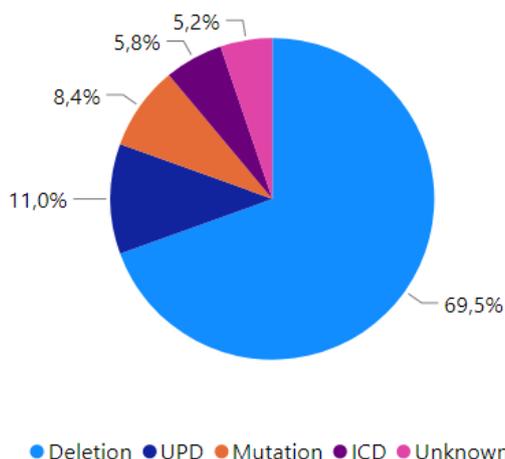


Figure 1: French regions

Region	#
Ile-de-France	29
Auvergne-Rhône-Alpes	22
Pays de la Loire	16
Nouvelle-Aquitaine	13
Grand Est	12
Normandie	11
Provence-Alpes-Côte d'Azur	11
Occitanie	10
Bretagne	7
Hauts-de-France	7
Bourgogne-Franche-Comté	6
Centre-Val de Loire	5
Corse	3
Territoires ultramarins	2
Total	154

✓ Diagnosis

Distribution per genotype

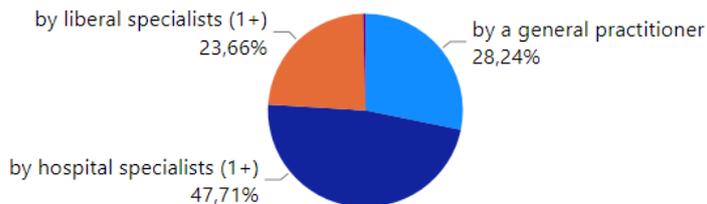


Age of diagnosis				
Age Range	Number	Mean	Median	Standard deviation
A : 0 - 4 years old	17	1,12	1	0,68
B : 4 - 12 years old	59	1,71	1	1,74
C : 12 - 18 years old	28	2,82	2	3,04
D : 18 - 30 years old	29	3,03	2	2,75
E : >= 30 years old	20	11,20	13	9,03
Total	153	3,34	2	4,97

The age of diagnosis is quite low (mean : 3.34 +/- 4.97). It increases with the age of the patient with higher variability.

The distribution is similar to the one found in the literature.

✓ A population closely followed medically



A person can be checked-up by different doctors : general practitioner, hospital or liberal specialists

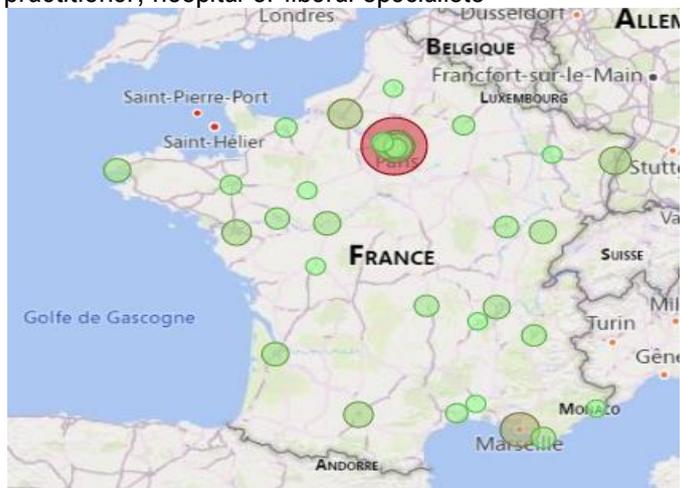


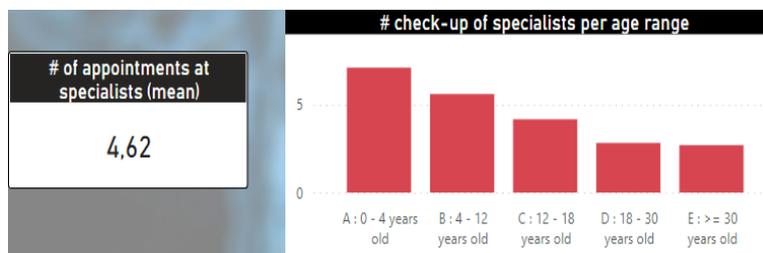
Figure 2: Check-up of patients in public hospitals

The color code and the size of the circles indicate more or less people in public hospitals

✓ With significant paramedical care

Age Range	Mean Check-up
A : 0 - 4 years old	3,59
B : 4 - 12 years old	3,42
C : 12 - 18 years old	2,50
D : 18 - 30 years old	1,83
E : >= 30 years old	1,80
Total	2,63

On average, the number of paramedical check-ups per month is **2.63** with a decrease as the patient gets older.

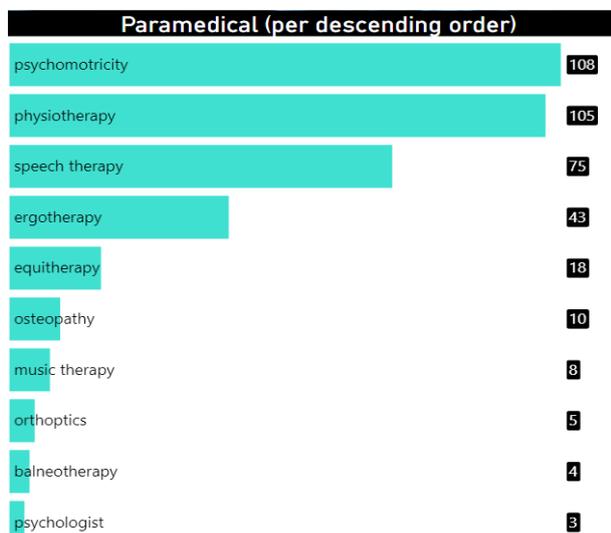


On average, the number of appointments at specialists in the current year is **4,62** and this number decreases with the age of the patient.

Site Name	#
APHP Necker	20
APHM Marseille	9
APHP Pitié Salpêtrière	8
CHU Rouen	7
CHU Strasbourg	6
APHP Raymond Pointcaré	5
APHP Trousseau	5
CHU Nantes	5
CHU Toulouse	5
CHU Besançon	4

Figure 3: TOP 10 depending on the number of patients followed

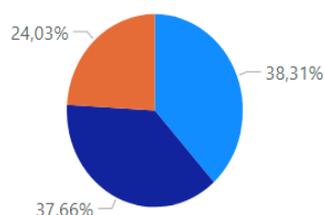
There are **44** public hospitals involved in the check-up of Angelman syndrome patients in the territory



With multiple and multidisciplinary care

✓ With major impacts on family life

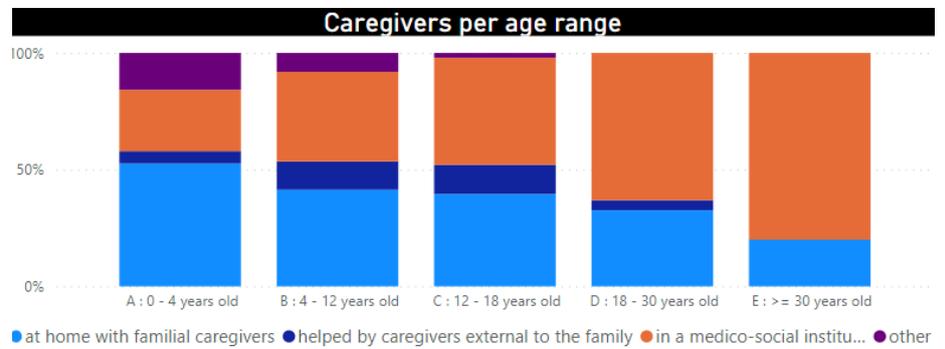
Impact on professional activities



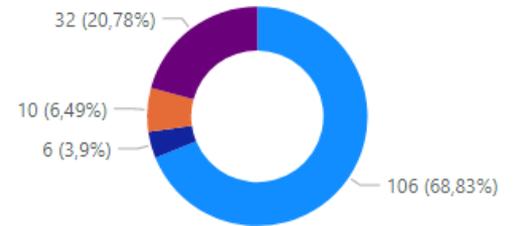
● Change to part-time work ● Stop professional activity ● No change

3/4 of people are forced to change their professional activities (stop or change to part-time work)

The support is provided in the first moments of life by family caregivers, possibly helped by caregivers outside the family. Then, as patients get older, medico-social institutes become the norm.

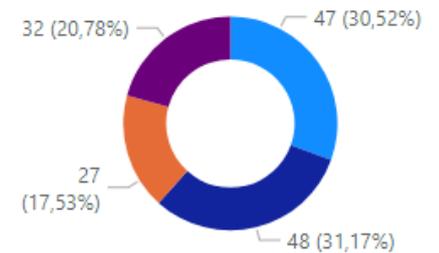


Seizure	#
had controlled epileptic seizures with an appropriate treatment	106
had infrequent epileptic seizures but is not currently being treated	6
had uncontrolled epileptic seizures and treatments have little or no effect	10
was not affected by seizures	32
Total	154



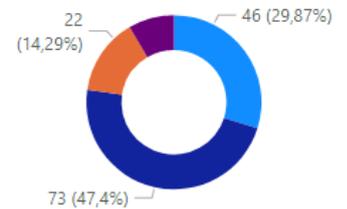
Seizures affect about 80% of patients. For the majority, seizures are controlled but for 6%, they remain an issue.

Sleep	#
was not affected by sleep disorders	32
had trouble sleeping and had no drug	27
had a good sleep with appropriate drugs	48
had a disturbed sleep and the treatments have little or no effect	47
Total	154

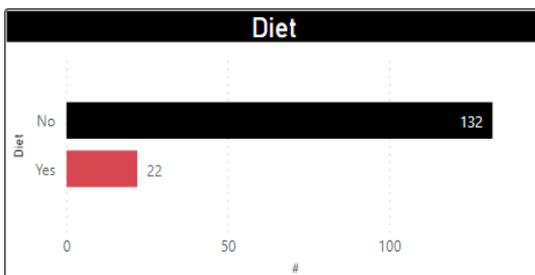


Sleep disorders affect about 80% of people and for quite a significant part (47/154), current treatments have little to no effect.

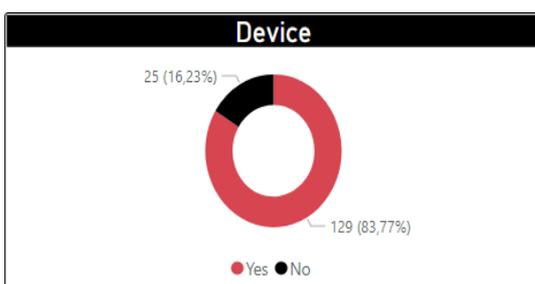
Behavior	#
was not affected by negative behaviors	46
sometimes exhibits negative behaviors but is not currently on medication	73
shows improved behavior after taking appropriate medication	22
has behavioral problems and drugs have little or no effect	13
Total	154



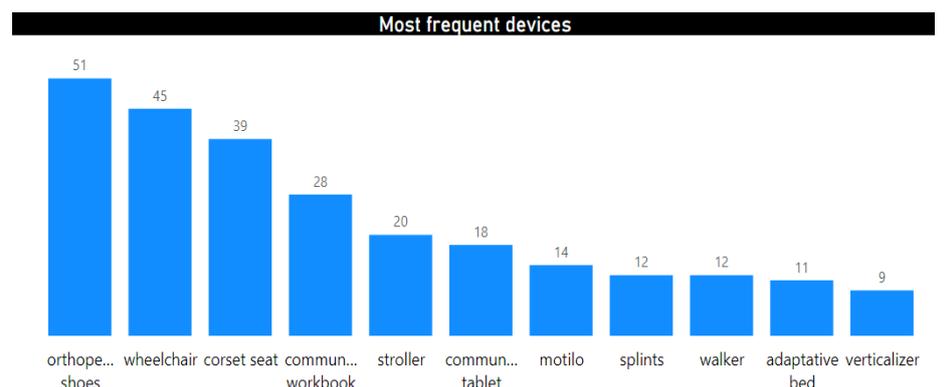
Behavior is a challenge for a quarter of respondents (35/154) and remains a problem for 13 patients



14% of patients follow a diet, predominantly a low-calorie diet

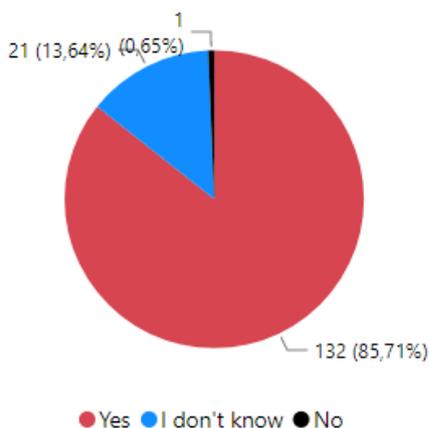


84% of patients require at least one device.

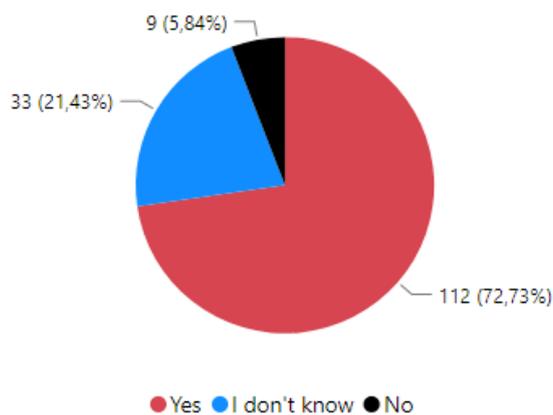


✓ With the will to get involved in the AS research

Interest for a registry



Interest for a Natural History Study

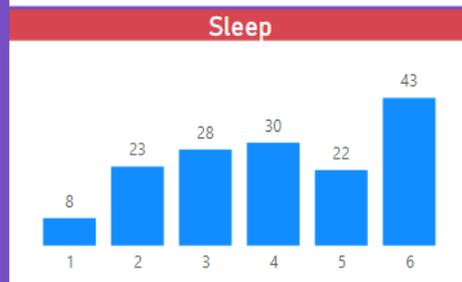
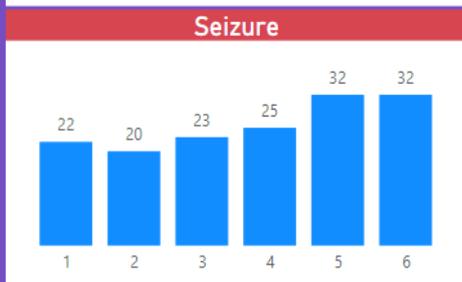
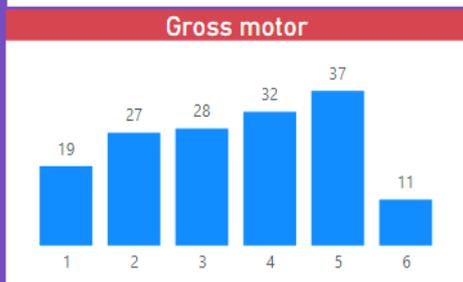
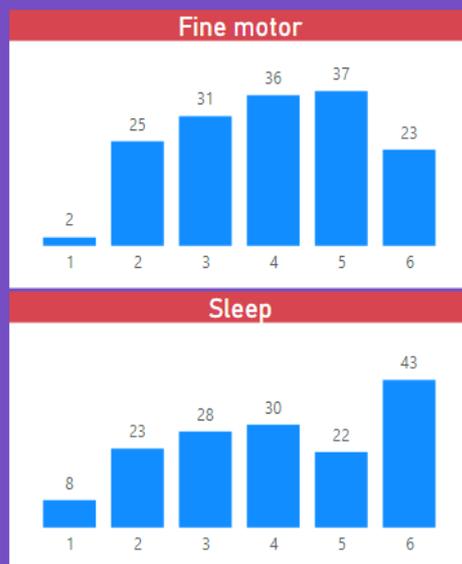
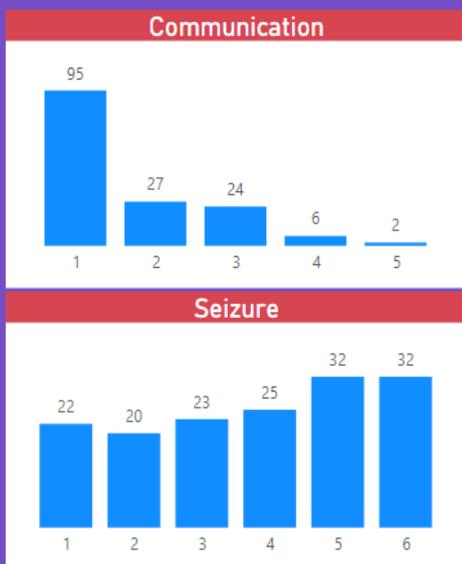
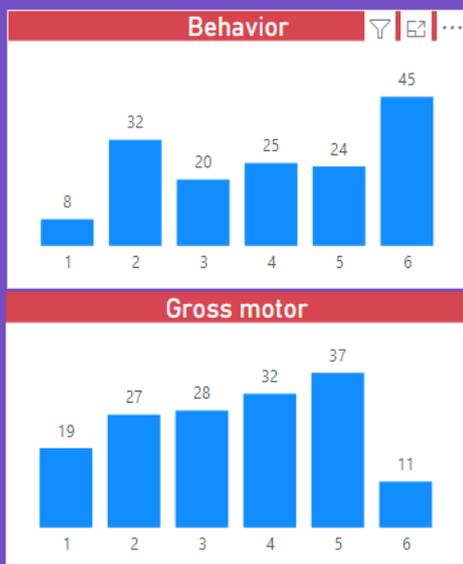


85% of respondents show interest for a **registry**

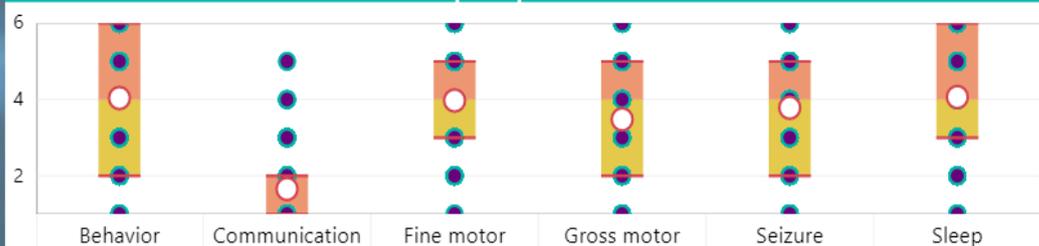
73% for a **Natural History Study**

To the point, what do you think would be the most important criteria if a treatment improved the quality of life of patients?
(1 being considered the most important criterion and 6 the least important)

Distribution per criteria : 1 more important until 6 less important



Box-plot per criteria



Q1 = 25
Q3 = 75
Box less important in orange
Box more important in yellow

of answers
154

Communication, regardless of genotype or age, is very clearly the most important end point for which families would like improvement when therapeutic treatment are available in the future.

This synthesis is an overview based on a statistical analysis. We can provide an interactive analysis and more graphics with an access to our BI tools if you wish to run by yourself your own analysis (send an email contact@fastfrance.org)

1. 25-year estimate : 750000 births/year × 1/15000 × 25 years
2. <https://www.angelman-afsa.org/>
3. <https://www.fastfrance.org/>
4. <https://syndromeangelman-france.org/>