# SURVEY for patients suffering from Canavan Disease

Date when this questionnaire was completed

		day month year	
Patient's name:	(First)	(Last)	
Gender:   M	$\Box$ <b>F</b>		
Date of birth of yo	ur child / / day month year	If deceased, date of death	/ / day month year
Name of physician pr	imarily responsible for your child	d's care	
Medical center where	your child received care		
-	completing this form:		

/

/

#### Dear Family,

Please fill out this form to the best of your knowledge and send it back to us within 2 weeks. Leave out answers that you are not sure about. You can always contact us for support:

Dr. Annette Bley University Hospital Eppendorf Pediatric Neurology Hamburg, Germany Phone 0049-40-74105-6391

Email: abley@uke.de

We also may contact you to clarify some of the answers.

### Family history In which country/city does your child live (country of origin)? □ ves □ no □ unknown Are the biologic parents related to each other by blood? Does the child have **relatives that are / have been affected** by the same disease? $\Box$ **ves** $\Box$ **no** If other family members are affected: How many siblings are affected? How many siblings are unaffected? How many other relatives are affected? If your child has other relatives that are affected by the same disease, how are they related to your child? (i.e. maternal uncle of the child) What are the **ethnic backgrounds** of the biologic parents? (Hispanic or non hispanic) Mother \_\_\_\_ Father \_\_\_ What is the race of the biological parents? Mother Father **Pregnancy and Perinatal history** Did the mother of the child take any drugs during pregnancy? □ves □no □ unknown Was delivery at full term (after 38<sup>th</sup> week of pregnancy)? □ves □no If not, at what gestational age was your child born? weeks Birth weight \_\_\_\_\_ lbs / grams Length at birth \_\_\_\_\_ inches / cm **APGAR score** \_\_\_\_ / \_\_\_ / \_\_\_ (1 min / 5 min / 10 min) Was the **baby healthy after birth**? **□ves □no □ unknown** If the baby was not healthy after birth, **problems in the neonatal period** were due to: (please check all that apply) ☐ Respiratory distress ☐ Metabolic abnormalities ☐ Apnea (did not breath) □ Neurological abnormalities ☐ **Stridor** (high-pitched wheezing sound) ☐ Head ultrasound abnormalities ☐ Feeding problems ☐ Malformation of body parts ☐ **Icterus** (jaundice) **Nystagmus** (uncontrolled eye movements) Arthrogryposis (congenital stiffness of joints) Infections Other (please specify: \_\_\_\_\_

How long did the newborn stay in hospital? \_\_\_\_\_ days

## First symptoms and diagnosis of Canavan Disease

The	infant was completely normal before the onse	et of t	he first symptoms of the disease.
$\Box$ y	res 🗆 no		
Wha	at were the <b>symptoms at the onset</b> of the dise	ease?	(please check all that apply)
	Developmental delay Low muscle tone ('floppiness') Feeding problems (poor sucking)		Sleep disturbances High muscle tone ('stiffness') Seizures (epileptic fits)
	Failure to thrive (poor weight gain or growth) Abnormal eye movements Poor vision Irritability Macrocephaly (head too large) Poor head control Other (please specify)		Reduced movements of limbs Abnormal movements of limbs Poor hearing Change of behavior Microcephaly (head too small) Abnormal sweating
The	t symptoms occurred at the age of ye diagnosis was confirmed at the age of was the diagnosis confirmed? (please check al NAA (N-acetylaspartate) elevated in urine NAA elevated by MRS ASPA (aspartoacylase) activity decreased ASPA activity decreased in blood cells	year(  that a	(s) and month(s) pply)
	Mutations in ASPA gene  Other (please specify)  ase mutations in ASPA gene were found, please		
	cerebrospinal fluid (CSF) protein elevated biological samples available (blood, cerebro res no  If biological samples are available, whom one of the control	spinal	
	(Address of physician, hospital, medical ce	nter, o	or laboratory)

## **Psychomotor development**

## Eyesight and hearing

Was your child ever able to <b>follow an object visually</b> ?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did you notice a decline of visual abilities in your child?	
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did you notice a total loss of visual function in your child	?
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Was your child <b>able to hear</b> ?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did you notice a decline of hearing in your child?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	$\square$ no
If yes, did you notice a <b>complete loss of hearing</b> in your child?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Did you notice a hypersensitivity to noise (startling) in your child?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, was the <b>hypersensitivity to noise</b> lost?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Motor skills	
Did your child gain <b>head control</b> ?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did your child lose head control?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Was your child able to <b>roll over from back to front or front to back</b> ?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to roll over?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Was your child able to <b>sit</b> without <b>support</b> ?	
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to sit without support?	
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
Was your child able to <b>sit</b> with <b>support</b> ?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no

If yes, did your child <b>lose the ability to sit with support</b> ?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Did your child learn to <b>crawl</b> independently?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to crawl independently?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Did your child learn to <b>stand up</b> without support?	
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to stand up independently?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Did your child learn to walk with support?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to walk without support?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Did your child learn to walk without support?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to walk with support?	
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
Fine motor skills	
Did your child learn to reach for an object?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to reach for an object?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Did your child <b>gain any voluntary hand function</b> (e.g. hold cup)?	
$\square$ yes, at the age of $\underline{\hspace{1cm}}$ year(s) $\underline{\hspace{1cm}}$ month(s)	$\Box$ no
If yes, did your child lose hand function completely?	
$\square$ yes, at the age of $\_\_\_$ year(s) $\_\_\_$ month(s)	$\Box$ no
Did your child learn to <b>transfer an object from hand-to-hand</b> ?	
$\square$ yes, at the age of year(s) month(s)	$\Box$ no
If yes, did your child lose the ability to transfer an object from	hand-to-hand?
$\square$ yes, at the age of year(s) month(s)	$\square$ no
Did your child learn to scrawl / draw?	
$\square$ yes, at the age of year(s) month(s)	$\Box$ no
If yes, did your child lose the ability to scrawl / draw?	
$\square$ yes, at the age of year(s) month(s)	$\Box$ no

### **Development of language and other skills**

Was your child able to <b>imitate noises</b> ?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to imitate noises?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no
Was your child able to communicate with you?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to communicate?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no
Was your child able to <b>speak single words</b> (i.e. mama, dada)?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, <b>how many words</b> was the child able to speak?	word(s)
If yes, did your child lose the ability to speak words?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no
Was your child able to <b>speak single sentences</b> ?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to speak single sentence	es?
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Was your child able to <b>count to five</b> ?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to count to five?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Did the child <b>understand language</b> ?	
yes, at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to understand language	
yes, at the age of year(s) month(s)	no
	_ no
Was your child able to <b>tell stories</b> ?	
yes, at the age of year(s) month(s)	∪ no
If yes, did your child lose the ability to tell stories?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Was your child <b>able to read</b> ?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, did the child lose the ability to read?	
$\bigcirc$ <b>yes</b> , at the age of year(s) month(s)	□ no

Was your child able to write?	
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to write?	
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
Was your child able to <b>eat by himself / herself</b> ?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did your child lose the ability to eat by himself / he	rself?
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Was your child toilet trained?	
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, did your child lose toilet training skills?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Neurological findings	
Was <b>spasticity</b> diagnosed (increased muscle tone or stiffness)?	
☐ yes, at the age of year(s) month(s)	□ no
Did seizures (epileptic fits) occur?	
$\square$ <b>yes, at first</b> at the age of year(s) month(s)	□ no
Did abnormal eye movements (nystagmus) occur?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Were <b>irregularities of the optic nerve or retina</b> diagnosed?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, please specify:	
Did involuntary (abnormal hyperactive) movements of the body	occur?
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Were <b>muscle reflexes</b> ( <b>deep tendon reflexes</b> ) <b>reduced</b> or have ot reduced sensitivity to touch, pain or vibration) been diagnosed?	her signs of impaired peripheral nerves (i.e.
$\bigcirc$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, please specify which:	
Did you notice any <b>impairment of cognitive function</b> (i.e. poor c in your child?	concentration, forgetfulness, learning disability)
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
If yes, please specify which:	

Did your child suffer from <b>mood disorders</b> (i.e. depression, anxiet	ty etc.)?
$\square$ <b>yes</b> , at the age of year(s) month(s)	no
If yes, please specify which:	
Other health problems	
Did frequent <b>vomiting</b> occur?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Did your child suffer from <b>constipation</b> ?	
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
Did your child suffer from <b>gastro-oesophageal reflux</b> ?	
$\Box$ <b>yes</b> , at the age of year(s) month(s)	□ no
Was surgery for prevention of gastric reflux performed?  — yes, at the age of year(s) month(s)	□ no
Did your child need gastric tube feeding?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	∪ no
Did your child have <b>problems with excessive secretions / mucus</b>	?
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Did your child have other problems with breathing?	
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
Did any <b>renal problems</b> occur?	
<b>yes,</b> at the age of year(s) month(s)	□ no
If yes, which renal problems occurred?	
Did your child have <b>other health problems</b> that have not been me	ntioned yet?
$\square$ <b>yes,</b> at the age of year(s) month(s)	□ no
If other health problems occurred, please specify which:	
Did your child receive <b>physical therapy or other supportive the</b>	capy?
$\square$ <b>yes</b> , at the age of year(s) month(s)	□ no
If yes, what other types of training or support did your ch	ild get? (please specify)

	type of school (Kindergar	•	•		child visit	?
	f school:	_				
Type o	f school:	from the age of	to	years		
How w	vas the <b>evolution of the di</b> s	sease? (please check all t	that apply)			
□ sta	able, from the age of	_ to month(s)	/ (year(s)			
$\Box$ int	ermittent, from the age of	f to mo	onth(s) / (ye	ear(s)		
□ slo	wly progressive, from the	e age of to	month	(s) / (year(s)		
□ qui	ckly progressive, from th	e age of to	month	u(s) / (year(s)		
□ no	ne of the above, from the	age of to	month(s	s) / (year(s)		
	,	<i>C</i>	_ `			
Diogr	ostic workup					
O	•					
	ay have reports of the test nations of some procedure	5 <b>5</b>		-		esults.
Was an	n (MRI) of the head done	?			□ yes	□ no
	If yes, who can we contact		s?		·	
-						-
-	Address of physician, hospital o	r medical center )				-
Were n	nerve conduction studies	performed?			□ yes	□ no
	If yes, was nerve conduction	•			□ yes	□ no
	hearing test performed (au	-	sponse, BE	ARs)?	□ yes	□ no
	If yes, the results were abn				□ yes	□ no
	visual evoked potentials ( If yes, the results were about				□ yes □ yes	□ no
Was an	n electroretinogram (ERC	G) performed?			□ yes	□ no
	If yes, the results were abn				□ yes	□ no
	notor evoked potentials (				□ yes	□no
	If yes, the results were abn				□ yes	□ no
	<b>ensory evoked potentials</b> If yes, the results were abn				□ yes □ yes	□ no
	n electroencephalogram (				□ yes	□ no
	If yes, the results were abn				□ yes	□ no

				Page 10
Was head circumference me	easured?		□ yes	□ no
If head circumference	was measured, whic	h value was noted?		
inches / c	m at the age of	year(s) and	month(s)	
inches / c	m at the age of	year(s) and	month(s)	
inches / c	m at the age of	year(s) and	month(s)	
inches / c	m at the age of	year(s) and	month(s)	
inches / c	m at the age of	year(s) and	month(s)	
inches / c	m at the age of	year(s) and	month(s)	
inches / c	m at the age of	year(s) and	month(s)	

# Development of seizures, language skills and visual abilities across age

Age	Hov	v often did seizures occur?	How	were the language skills?	How	were the visual abilities of your child?
		no seizures		normal for age		normal
1 <sup>st</sup> year		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
•		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
2 <sup>nd</sup> year		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
•		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
3 <sup>rd</sup> year		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
·		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
4 <sup>th</sup> year		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
·		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
5 <sup>th</sup> year		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
·		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
6 <sup>th</sup> year		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
v		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability

Age	Hov	v often did seizures occur?	How	were the language skills?	Hov	were the visual abilities of your child?
		no seizures		normal for age		normal
7 <sup>th</sup> year		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures				normal
a		1-2 seizures / year		normal for age minor difficulties		diminished, good spatial orientation
8 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		more than 12 seizures / year				no visual ability
		no seizures		normal for age		normal
9 <sup>th</sup> year		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
10 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
11 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
12 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
13 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
14 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
15 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
	1		ı		1	

Age	How	often did seizures occur?	Hov	w were the language skills?	Hov	w were the visual abilities of your child?
		no seizures		normal for age		normal
_		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
16 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
	O 1	more than 12 seizures / year		no verbal contact		no visual ability
		no seizures		normal for age		normal
_		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
17 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
	O 1	more than 12 seizures / year		no verbal contact		no visual ability
	O 1	no seizures		normal for age		normal
		1-2 seizures / year		minor difficulties		diminished, good spatial orientation
18 <sup>th</sup> year		less than 12 seizures / year		major difficulties		poor, spatial orientation difficult
		more than 12 seizures / year		no verbal contact		no visual ability
		ative effect(s) of the exper	rime	ental treatment did occu	ır? (p	please specify)
(i.e. G  ☐ ye	lycero es (	nild ever receive <b>any med</b> I triacetate (GTA), Lithium  no se specify which one(s): _	<b>icat</b> Citra	ion that was thought t ate (Eskalith), Acetazolar	o an	meliorate the course of the disease? (Diamox) etc.)
Did yo		nild ever take <b>any nutritic</b>	onal	supplements that wer	e th	ought to ameliorate the course of
(i.e. C						
	oenzyı	me Q10, Alpha-Lipoic Acid,	, Асе	etyl -L-Carnitine etc.)		
□ ye	-	me Q10, Alpha-Lipoic Acid, <b>⊃ no</b>	, Асє	etyl -L-Carnitine etc.)		

Which of the medication had a <b>benefit to your</b> child?										
Which <b>be</b>	enefit did it shov	v?								
Which of the experimental medications showed <b>only negative side effects</b> ?										
Which si	<b>de effects</b> did it	show?								
Did your	child take <b>medi</b>	cation for spas	ticity?							
□ yes	□ no									
If yes, ple	ease specify whi	ch:								
If medica	tion for spastici	ty was given, w	<b>hen first</b> an	d <b>until when</b> was	it given?					
From	year(s)	month(s)	until	year(s)	month(s)					
Was med	lication for seiz	ures given?								
□ yes	□ no									
If yes, ple	ease specify whi	ch:								
If medica	tion for seizures	was given, wh	<b>en first</b> and	until when was it	given?					
From	year(s)	month(s)	until	year(s)	month(s)					
Did your	child t <b>ake med</b> i	cation for dyst	onia (move	ment disorders)?						
□ yes	□ no									
If yes, ple	ease specify whi	ch:								
If medica	tion for seizures	was given, wh	<b>en first</b> and	until when was it	given?					
From	year(s)	month(s)	until	year(s)	month(s)					

What other drugs did your child take for prolonged periods of time?										
(if possible please note also the duration of administration of this medication)										
·										

You may attach any comments that you consider to be important.

Thank you for your support!

You are helping other families.