

A&I

ANÄSTHESIOLOGIE & INTENSIVMEDIZIN

Offizielles Organ: Deutsche Gesellschaft für Anästhesiologie und Intensivmedizin e. V. (DGAI)
Berufsverband Deutscher Anästhesistinnen und Anästhesisten e. V. (BDA)

Organ: Deutsche Interdisziplinäre Vereinigung für Intensiv- und Notfallmedizin e. V. (DIVI)



ROHHAD

orphananesthesia

a project of the German Society
of Anaesthesiology and Intensive Care Medicine

SUPPLEMENT NR. 14 | 2026

OrphanAnesthesia –

ein krankheitsübergreifendes Projekt des Wissenschaftlichen Arbeitskreises Kinderanästhesie der Deutschen Gesellschaft für Anästhesiologie und Intensivmedizin e.V.

Ziel des Projektes ist die Veröffentlichung von Handlungsempfehlungen zur anästhesiologischen Betreuung von Patientinnen und Patienten mit seltenen Erkrankungen. Damit will OrphanAnesthesia einen wichtigen Beitrag zur Erhöhung der Patientensicherheit leisten.

Patientinnen und Patienten mit seltenen Erkrankungen benötigen für verschiedene diagnostische oder therapeutische Prozeduren eine anästhesiologische Betreuung, die mit einem erhöhten Risiko für anästhesieassoziierte Komplikationen einhergehen. Weil diese Erkrankungen selten auftreten, können Anästhesistinnen und Anästhesisten damit keine Erfahrungen gesammelt haben, sodass für die Planung der Narkose die Einholung weiterer Information unerlässlich ist. Durch vorhandene spezifische Informationen kann die Inzidenz von mit der Narkose assoziierten Komplikationen gesenkt werden. Zur Verfügung stehendes Wissen schafft Sicherheit im Prozess der Patientenversorgung.

Die Handlungsempfehlungen von OrphanAnesthesia sind standardisiert und durchlaufen nach ihrer Erstellung einen Peer-Review-Prozess, an dem eine Anästhesistin bzw. ein Anästhesist sowie eine weitere Krankheitsexpertin bzw. ein weiterer Krankheitsexperte (z. B. Pädiaterin bzw. Pädiater oder Neurologin bzw. Neurologe) beteiligt sind. Das Projekt ist international ausgerichtet, sodass die Handlungsempfehlungen grundsätzlich in englischer Sprache veröffentlicht werden.

Ab Heft 5/2014 werden im monatlichen Rhythmus je zwei Handlungsempfehlungen als Supplement der A&I unter www.ai-online.info veröffentlicht. Als Bestandteil der A&I sind die Handlungsempfehlungen damit auch zitierfähig. Sonderdrucke können gegen Entgelt bestellt werden.

OrphanAnesthesia –

a project of the Scientific Working Group of Paediatric Anaesthesia of the German Society of Anaesthesiology and Intensive Care Medicine

The target of OrphanAnesthesia is the publication of anaesthesia recommendations for patients suffering from rare diseases in order to improve patients' safety. When it comes to the management of patients with rare diseases, there are only sparse evidence-based facts and even far less knowledge in the anaesthetic outcome. OrphanAnesthesia would like to merge this knowledge based on scientific publications and proven experience of specialists making it available for physicians worldwide free of charge.

All OrphanAnesthesia recommendations are standardized and need to pass a peer review process. They are being reviewed by at least one anaesthesiologist and another disease expert (e.g. paediatrician or neurologist) involved in the treatment of this group of patients.

The project OrphanAnesthesia is internationally oriented. Thus all recommendations will be published in English.

Starting with issue 5/2014, we'll publish the OrphanAnesthesia recommendations as a monthly supplement of A&I (Anästhesiologie & Intensivmedizin). Thus they can be accessed and downloaded via www.ai-online.info. As being part of the journal, the recommendations will be quotable. Reprints can be ordered for payment.

**Bisher in A&I publizierte
Handlungsempfehlungen finden
Sie unter:**

www.ai-online.info/Orphsuppl
www.orphananesthesia.eu

Find a survey of the recommendations published until now on:

www.ai-online.info/Orphsuppl
www.orphananesthesia.eu

Projektleitung

**Dr. med. Christine Gaik,
DESAIC, FESAIC**

Oberärztin
Klinik für Anästhesie und
Intensivtherapie
Universitätsklinikum Gießen
und Marburg GmbH,
Standort Marburg
Baldingerstraße
35033 Marburg, Deutschland
E-Mail:
gaikc@med.uni-marburg.de

**Priv.-Doz. Dr. med.
Philipp Gude, MHBA**

Geschäftsführender Oberarzt
Klinik für Anästhesiologie und
Intensivmedizin
Universitätsklinikum
St. Elisabeth-Hospital
Bleichstraße 15
44787 Bochum, Deutschland
E-Mail:
philipp.gude@ruhr-uni-bochum.de

orphan**anesthesia**

Anesthesia recommendations for

ROHHAD

Disease name: ROHHAD (acronym of Rapid-onset Obesity with Hypothalamic dysfunction, Hypoventilation and Autonomic Dysfunction)

ICD 10: Does not have a specific ICD code. It utilizes several codes, examples include E23.3 (Hypothalamic dysfunction, not elsewhere classified), E66.8 (other obesity), R06.89 (other abnormalities of breathing), and G90.9 (Autonomic Nervous System disorder, unspecified).

Synonyms: Rapid onset obesity, hypoventilation, hypothalamic dysfunction, and autonomic dysfunction

Disease summary: ROHHAD is a clinical entity with a median age of 3 years at onset characterized by sudden onset of dramatic weight gain, dysautonomia, and pulmonary complications. These include alveolar hypoventilation, obstructive sleep apnea, and decreased central responsiveness to hypercarbia. There are also several endocrinopathies associated with this disorder including hypernatremia, hyperprolactinemia, hypothyroidism, hypocortisolism and diabetes insipidus. Additional features of the disease include behavioral and mood disorders, as well as seizures and learning impairment. There is an associated entity known as ROHHADNET with a predisposition towards the development of neuroectodermal tumors such as neuroblastoma and ganglioneuroma [1]. As ROHHAD could be a neurological paraneoplastic syndrome, all patients with ROHHAD syndrome should be carefully screened for the presence of these tumors [2]. There is a recent increase in the number of cases reported from Asia, and their data are included in this update.

Medicine is in progress



Perhaps new knowledge

Every patient is unique

Perhaps the diagnosis is wrong

Translations may not always reflect the most recent updates of the English version



Find more information on the disease, its centers of reference and patient organizations on Orphanet: www.orpha.net

► **Citation:** Chandrakantan A: ROHHAD. Anästh Intensivmed 2026;67:S167–S174.
DOI: 10.19224/ai2026.S167

Emergency information

A	AIRWAY / ANESTHETIC TECHNIQUE	Ventilation more difficult due to soft tissue collapse, obesity. To date, there has not been literature suggesting difficult airway. Central and obstructive sleep apnea.
B	BLOOD PRODUCTS (COAGULATION)	There is no known bleeding diathesis associated with this disorder.
C	CIRCULATION	Obesity/alveolar hypoventilation affects lung function. Maybe right ventricular hypertrophy (RVH).
D	DRUGS	All medications with respiratory depressant effects should be administered judiciously. Caution is also advised with medications having long half-lives and respiratory depressant effects.
E	EQUIPMENT	Patients may have a tracheostomy tube in place, all necessary precautions for tracheostomy utilization should be employed. Postoperative cardiorespiratory monitoring

Typical surgery and procedures

Depends on the presentation of disease. May vary from GI procedures for associated Hirschsprung's disease, surgeries to palliate abnormal ventilation (diaphragmatic pacing [3], tracheostomy placement), or dysautonomia (permanent cardiac pacemaker placement). Surgery for removal of neural crest tumor (ganglioneuroma, neuroblastoma) [4,5]. May also be present for any surgery in the typical array of pediatric surgeries.

Type of anesthesia

Either general or regional anesthesia can be used for these patients with the following caveats. General anesthesia: patients may have impaired thermoregulation, hypothalamic dysfunction resulting in electrolyte disturbances, cardiac dysrhythmias and hemodynamic fluctuations due to autonomic dysfunction.

In case of ganglioneuroma or neuroblastoma, preoperative systemic hypertension may be present as well as large swings in intraoperative blood pressure during surgery: these cases should be managed as a pheochromocytoma [1,4,5].

Regional anesthesia may be complicated by obesity and the effect of sympatholysis and dysautonomia on the consequent hemodynamic response (or lack of one).

Necessary additional pre-operative testing (beside standard care)

Evaluation for all associated disorders. This includes an assessment of gastric emptying (gastroparesis: preinduction gastric ultrasound), cardiac abnormalities, (echocardiography to rule out pulmonary hypertension and right ventricular dysfunction) including the presence or absence of a pacemaker. Other concerns include electrolytic abnormalities, seizure disorders, endocrinopathies, behavioral disorders, and possible thermal dysregulation. At the very minimum, the anesthesiologist should perform a detailed history and physical examination to ensure adequate treatment of existing disorders and identify any other conditions which need optimization prior to surgery.

In addition, children should be evaluated for associated disorders that have not been diagnosed. Especially the endocrinopathies, the stress of surgery may uncover unknown and untreated disorders. These include:

- Abnormal hypothalamic-pituitary-adrenal axis
- Central hypothyroidism
- Impaired glucose tolerance or diabetes mellitus
- Diabetes insipidus

In all patients with ROHHAD preoperative pulmonary evaluation including sleep studies (evaluation of central and obstructive apnea and their response to treatment) is strongly recommended) in order to optimize the patient's respiratory status before surgery. When respiratory function measurements and/or sleep studies are abnormal, non-invasive ventilation (NIV) may be indicated and initiated before surgery [6]. Consequently, these patients should be trained in NIV before surgery and assisted with NIV during sedation, regional anesthesia and in the postoperative period.

If a tumor has been identified, the urine should be checked for the presence of catecholamine metabolites because they are a sign of a catecholamine-secreting tumor [1,4,5].

BiPAP has been used to manage nocturnal hypoventilation. Therefore, BiPAP should be available in the immediate postoperative period.

Particular preparation for airway management

There has not been an increased identified incidence of difficult airway in these patients. There is, however, an increased risk of postoperative apnea. Moreover, morbid obesity and the high incidence of OSA makes these patients high risk for difficult mask ventilation and at risk of hypoxemia during laryngoscopy and intubation. Apneic oxygenation with nasal prongs could be useful to prevent hypoxemia at induction.

Many of these patients already have pre-existing tracheostomies. Considerations for prolonged surgery include switching an uncuffed tracheostomy tube for a cuffed endotracheal tube.

Particular preparation for transfusion or administration of blood products

There are no unique blood dyscrasias for this population that have been defined.

Particular preparation for anticoagulation

Despite the presence of morbid obesity, there is no indications for anticoagulation in this patient population before adolescence.

Particular precautions for positioning, transportation and mobilization

These patients may have tracheostomy tubes or PEG tubes. They are also quite obese, which could lead to compressive neuropathies from improper positioning.

Interactions of chronic disease and anesthesia medications

In case of endocrine dysfunction, the usual treatment should be administered on the morning of surgery. A stress dose of corticosteroid may be considered in case of major surgery.

Many of these patients are on anticonvulsants and other psychotropic or mood enhancing medications.

Anesthetic procedure

The judicious use of premedication with minimal respiratory effects (e.g., dexmedetomidine), and usual treatment in children with behavioral disorders may be of benefit. These have been used safely [7].

Intraoperatively, the use of inhalational agents is safe in these children. Additionally, the use of intravenous agents with short elimination half-lives and minimal respiratory effects is advisable. Intravenous agents that have been used safely intraoperatively include ketamine and dexmedetomidine. The use of remifentanyl, which is metabolized by plasma esterases, has significant benefit in this patient population due to short lived depressant effects coupled with reliable metabolism.

Non depolarizing muscle relaxants have been used safely. There is no known contraindication to the use of succinylcholine.

As for other obese patients, dosage of IV drugs is best based on calculated lean body weight than on total (actual) body weight [8].

Particular or additional monitoring

Due to presence of dysautonomia, using invasive blood pressure monitoring should be considered for invasive or long-lasting procedures.

For the same reason, monitoring of body temperature is mandatory to avoid both hypo- and hyperthermia.

Postoperatively, these children are prone to prolonged apnea and carbon dioxide retention. Therefore, careful postoperative care includes respiratory monitoring with end tidal CO₂ monitoring, blood pressure monitoring for any lability due to dysautonomia, and the judicious use of pain medications to control pain to avoid respiratory depression. It has been suggested that opioids be avoided in order to avoid respiratory depression and that non-opioid pain adjuvant should be used in their entirety to control pain. While this seems intuitively correct, there is not enough data to support this view.

Several of these children are also on non-invasive ventilation such as BiPAP. If the children are on NIV preoperatively, this should be available postoperatively for ventilatory assistance.

Possible complications

Most of the complications usually occur when the disorder has not been diagnosed yet in the differential diagnosis of prolonged postoperative apnea. Blood pressure lability from dysautonomia is also a possible complication. Careful attention to thermal dysregulation should also be monitored by use of temperature measurement devices.

Post-operative care

Patients who are on non-invasive ventilation prior to surgery should continue their ventilation postoperatively. PICU admission should be strongly considered to closely monitor postoperative respiratory parameters.

Disease-related acute problems and effect on anesthesia and recovery

Prolonged postoperative apnea needs to be distinguished from prolonged anesthetic medication effect, which is very difficult in practice. Hence the suggestion of the use of medications with minimal respiratory depressant effects (e.g., remifentanyl) and short half-lives to minimize the probability of the latter.

Ambulatory anesthesia

Although there is no data to suggest that ambulatory anesthesia is intrinsically dangerous in these patients, the nature of the disease does suggest the patients should be hospitalized for at least 24 hours postoperatively to minimize any lingering medication related issues.

Obstetrical anesthesia

No data exists currently on this subject.

References

1. Abaci A, Catli G, Bayram E et al. A case of rapid-onset obesity with hypothalamic dysfunction, hypoventilation, autonomic dysregulation, and neural crest tumor: ROHHADNET syndrome. *Endocr Pract* 2013; 19: e 12-6.
2. Mandel-Brehm C, Benson LA, Tran B, Kung AF, Mann SA, Vazquez SE, Retallack H, PhD, Sample HA et al. BSZSCAN1 autoantibodies are associated with pediatric paraneoplastic ROHHAD. *Ann Neurol* 2022; 92: 279-91. DOI: 10.1002/ana.26380
3. Ballard HA, Leavitt OS, Chin AC, Kabre R et al. Perioperative anesthetic management of children with congenital central hypoventilation and rapid-onset obesity with hypothalamic dysfunction, hypoventilation, and autonomic dysregulation undergoing thoracoscopic phrenic nerve-diaphragm pacemaker implantation. *Pediatr Anesth* 2018; 28: 963-73.
4. Puri S, Yaddanapudi S, Menon P. Peri-operative management of a child with ROHHAD-NET syndrome undergoing neural crest tumour excision. *Anaesthesia Reports* 2022 ; 10 : e12172
5. Soni L, Girish K, Sirivella PK , Maitra S, Agarwal S, Chhabra A. Anesthetic management of a child with ROHHAD syndrome for major abdominal surgery. *Pediatr Anesth* 2023; 33 : 771-2.
6. Luccoli L, Ellena M, Esposito I, Bignamini E, Gregoretti C. Noninvasive ventilation in a child with hypothalamic dysfunction, hypoventilation, and autonomic dysregulation (ROHHAD). *Minerva Anesthesiol* 2012; 78: 1171-2.
7. Chandrakantan A, Poulton TJ. Anesthetic considerations for rapid-onset obesity, hypoventilation, hypothalamic dysfunction, and autonomic dysfunction (ROHHAD) syndrome in children. *Pediatric Anesthesia* 2013;23,1:28–32
8. Nafiu OO, Mills K, Tremper KK. Some Cautionary Tales About Ideal Body Weight Dosing of Anesthetic Medications: It Is Not All That Ideal! *Anesth Analg*. 2018 Aug;127(2):586-588. doi: 10.1213/ANE.0000000000002662. PMID: 29200076; PMCID: PMC5976506.

Date last modified: **October 2025**

This recommendation was prepared by:

Author

Arvind Chandrakantan, MD, MBA, MS: Professor of Anesthesiology & Pediatrics, Texas Children's Hospital/Baylor College of Medicine, Houston, TX 77030
arvind.chandrakantan@stonybrookmedicine.edu

Disclosure The authors have no financial or other competing interest to disclose. This recommendation was unfunded.

This recommendation was reviewed by:

Reviewer 1

Fabrizio Racca, Anaesthesiologist, Ospedale Pediatrico ASO Alessandria, Italy
fabrizio.racca@gmail.com

Cesare Gregoretti, Anaesthesiologist, ASO CTO-CRF-Maria Adelaide, Italy
c.gregoretti@gmail.com

Reviewer 2

Hui Ben Chew, Clinical Geneticist, Kuala Lumpur Hospital, Malaysia
hbchew155@hotmail.com

Editorial review 2019

Tino Münster, Department of anaesthesiology and intensive care medicine, Hospital Barmherzige Brüder, Regensburg, Germany
Tino.Muenster@barmherzige-regensburg.de

Disclosures The reviewers have no financial or other competing interest to disclose.

Update and revision (October 2025)

Author

Arvind Chandrakantan, MD, MBA, MS: Professor of Anesthesiology & Pediatrics, Texas Children's Hospital/Baylor College of Medicine, Houston, TX 77030
arvind.chandrakantan@stonybrookmedicine.edu

Reviewer

Francis Veyckemans, Retired pediatric anaesthesiologist and honorary professor UCLouvain Medical School, Ottignies-Louvain-la-Neuve, Belgium
veyckemansf@gmail.com

Editorial Review

Christine Gaik, Anesthesiologist, Department of Anesthesiology and Intensive Care Medicine, University Hospital Giessen and Marburg, Campus Marburg and Philipps University of Marburg, Germany
gaikc@med.uni-marburg.de

Herausgeber



DGAI

Deutsche Gesellschaft
für Anästhesiologie und
Intensivmedizin e. V.
Präsident: Prof. Dr. G. Marx,
Aachen



BDA

Berufsverband Deutscher
Anästhesistinnen und
Anästhesisten e. V.
Präsidentin: Prof. Dr.
G. Beck, Mannheim

Schriftleitung

Präsident/in der Herausgeberverbände

Gesamtschriftleiter/Editor-in-Chief:

Prof. Dr. Dr. Kai Zacharowski,
ML FRCA FESAIC, Frankfurt

Stellvertretender Gesamtschriftleiter/

Deputy Editor:

Prof. Dr. T. Volk, Homburg/Saar

CME-Schriftleiter/CME-Editor:

Prof. Dr. W. Zink, Ludwigshafen

Redaktionskomitee/Editorial Board

Priv.-Doz. Dr. E. Adam, Frankfurt

Prof. Dr. M. Adamzik, Bochum

Dr. J. Aulenkamp, Essen

Prof. Dr. G. Beck, Mannheim

Prof. Dr. T. Brenner, Essen

Prof. Dr. A. Brinkmann, Heidenheim

Prof. Dr. M. Coburn, Bonn

Prof. Dr. S.M. Coldewey, Zürich

Prof. Dr. V. von Dossow, Bad Oeynhausen

Prof. Dr. B. Ellger, Dortmund

Prof. Dr. K. Engelhard, Mainz

Prof. Dr. M. Fischer, Göttingen

Prof. Dr. D. Fries, Innsbruck

Prof. Dr. J.-T. Gräsner, Kiel

Prof. Dr. K. Hahnenkamp, Greifswald

Prof. Dr. A.R. Heller, Augsburg

Prof. Dr. B. Jungwirth, Ulm

Prof. Dr. T. Loop, Freiburg

Prof. Dr. K. Meissner, Göttingen

Prof. Dr. W. Meißner, Jena

Prof. Dr. P. Meybohm, Würzburg

Prof. Dr. T. Müller-Wolff, Ludwigsburg

Prof. Dr. H. Mutlak, Offenbach

Prof. Dr. C. Nau, Lübeck

Prof. Dr. V. Neef, Frankfurt

Prof. Dr. B. O'Brien, Berlin

Dr. B. Oehler, Heidelberg

Prof. Dr. S.G. Sakka, Koblenz

Prof. Dr. M. Sander, Gießen

Prof. Dr. B. Saugel, Hamburg

Prof. Dr. S. Schäfer, Oldenburg

Priv.-Doz. Dr. H. Schöchl, Salzburg

Prof. Dr. A. Steinbicker, Köln

Dr. M.T. Völker, Leipzig

Prof. Dr. N.-M. Wagner, Würzburg

Prof. Dr. F. Wappler, Köln

Prof. Dr. M. Weigand, Heidelberg

Redaktion/Editorial Staff

Korrespondenzadresse:

Neuwieder Straße 9 | 90411 Nürnberg |

Deutschland | Tel.: 0911 9337812

E-Mail: redaktion@ai-online.info

Verlag & Druckerei

Aktiv Druck & Verlag GmbH

An der Lohwiese 36 |

97500 Ebelsbach | Deutschland

www.aktiv-druck.de



Geschäftsführung

Wolfgang Schröder | Jan Schröder |

Tel.: 09522 9435-0 | Fax: 09522 9435-67

E-Mail: info@aktiv-druck.de

Anzeigen | Vertrieb

Pia Müller | Tel.: 09522 9435-70

E-Mail: anzeigen@aktiv-druck.de

Verlagsrepräsentanz

Jürgen Distler

Neuwieder Straße 9 | 90411 Nürnberg

Tel.: 0171 9432534

E-Mail: jdistler@bda-ev.de

Herstellung | Gestaltung

Robert Kux | Tel.: 09522 9435-71

E-Mail: ai@aktiv-druck.de

Titelbild

Gestaltung: Roland Mehl

3D Arts GmbH

Dunantstraße 2 | 92224 Amberg

E-Mail: rmehl@3darts.de

www.3darts.de

Erscheinungsweise 2026

Der 67. Jahrgang erscheint 6x pro Jahr
alle zwei Monate, beginnend ab Februar.

**Die A&I ist die Verbandszeitschrift von
DGAI und BDA.**

**Für Mitglieder der DGAI und/oder
des BDA ist der Bezug der Zeitschrift
im Mitgliedsbeitrag enthalten.**

Der Verlag veröffentlicht die Beiträge in der
von den Autorinnen und Autoren gewählten
Genderform.

Allgemeine Geschäfts- und Liefer- bedingungen

Die allgemeinen Geschäfts- und Liefer-
bedingungen entnehmen Sie bitte dem Im-
pressum auf www.ai-online.info

Indexed in **CINAHL**; **Current Contents®/**
Clinical Medicine; **EBSCO**; **EMBASE/**
Excerpta Medica; **Medical Documen-**
tation Service; **Research Alert**;
Sci Search; **Scopus**; **SUBIS Current**
Awareness in Biomedicine; **VINITI**;
Russian Academy of Science.

Nachdruck | Urheberrecht

Die veröffentlichten Beiträge sind urheber-
rechtlich geschützt. Jegliche Art von Ver-
vielfältigungen – sei es auf mechanischem,
digitalem oder sonst möglichem Wege –
bleibt vorbehalten. Die Aktiv Druck & Ver-
lags GmbH ist allein autorisiert, Rechte zu
vergeben und Sonderdrucke für gewerb-
liche Zwecke, gleich in welcher Sprache,
herzustellen. Anfragen hierzu sind nur an
den Verlag zu richten. Jede im Bereich ei-
nes gewerblichen Unternehmens zulässig
hergestellte oder benutzte Kopie dient ge-
werblichen Zwecken gem. § 54 (2) UrhG.
Die Wiedergabe von Gebrauchsnamen,
Handelsnamen, Warenbezeichnungen
usw. in dieser Zeitschrift berechtigt auch
ohne besondere Kennzeichnung nicht zu
der Annahme, dass solche Namen im Sinne
der Warenzeichen- und Markenschutz-Ge-
setzgebung als frei zu betrachten wären
und daher von jedermann benutzt werden
dürften.

Wichtiger Hinweis

Für Angaben über Dosierungsanweisun-
gen und Applikationsformen kann vom
Verlag und den Herausgebern keine Ge-
währ übernommen werden. Derartige An-
gaben müssen vom jeweiligen Anwender
im Einzelfall anhand anderer Literaturstel-
len auf ihre Richtigkeit überprüft werden.
Gleiches gilt für berufs- und verbands-
politische Stellungnahmen und Empfeh-
lungen.

Die Beiträge aus der A&I
finden Sie online unter:
www.ai-online.info

CONTACT US

Please do not hesitate to contact us. We will be glad to answer and provide further information to you at any time.

.....
Name

.....
First Name

.....
Department / Hospital

.....
Place

.....
Telephone

.....
E-Mail

.....
Date / Signature

Please contact me for further information

☐

I would like to participate in the project

☐

ADDRESS

German Society of Anaesthesiology and
Intensive Care Medicine
Neuwieder Straße 9 | 90411 Nuremberg | Germany
Tel.: +49-911-933780
Email: info@orphananesthesia.eu