

Cosmetic Injection Techniques

A Text and Video Guide to Neurotoxins and Fillers

Theda C. Kontis
Victor G. Lacombe

Second Edition



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Cosmetic Injection Techniques

A Text and Video Guide to Neurotoxins and Fillers

Second Edition

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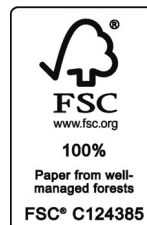
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I dedicate this second edition to David and Alexandra, for their love and support; to Mom, my greatest fan; and to the memory of my father, my angel.

– *TCK*

I dedicate, with love, this second edition to my wife, Alice, and to my children, Victoria and Max: you all mean the world to me.

– *VGL*

We jointly dedicate this book to our patients, whose trust and feedback allow us to improve and refine our injection techniques.

– *TCK and VGL*

Contents

▶ denotes a chapter with video content on MedOne

Foreword	xi
Preface	xii
Acknowledgments	xiv
Menu of Accompanying Videos	xv
 Section I Introduction to Injectables	
1 The Consultation	2
2 The Physicians Aesthetic Coalition for Injectable Safety	4
 Section II Introduction to Neurotoxins	
3 Neurotoxins Overview	6
4 Neurotoxin Preparation	8
5 Instrumentation for Neurotoxin Injections	9
 Section III Neurotoxin Injection Techniques	
▶ 6 Neurotoxin Injection for Glabellar Frown Lines	13
▶ 7 Neurotoxin Injection for Forehead Wrinkles	20
▶ 8 Neurotoxin Injection for Smile Lines and Crow’s Feet	26
▶ 9 Neurotoxin Injection for Lateral Brow Lift	30
▶ 10 Neurotoxin Injection for Chemical Brow Lift	32
▶ 11 Neurotoxin Injection for Lower Eyelid Roll	35
▶ 12 Neurotoxin Injection for Bunny Lines	37
▶ 13 Neurotoxin Injection for Nasal Tip Lift	40
14 Neurotoxin Injection for Nasal Flare	42
▶ 15 Neurotoxin Injection for Elevating the Oral Commissures	44
▶ 16 Neurotoxin Injection for Lip Lift	46
▶ 17 Neurotoxin Injection for Smoker’s Lines	48
▶ 18 Neurotoxin Injection for Gummy Smile	50
▶ 19 Neurotoxin Injection for Dimpled Chin	54
▶ 20 Neurotoxin Injection for Platysmal Banding	56

▶	21	Neurotoxin Injection for Necklace Lines.....	58
▶	22	Neurotoxin Injection for the Décolleté	60
▶	23	Neurotoxin Injection for Nefertiti Neck Lift	63
▶	24	Neurotoxin Injection for Masseter Hypertrophy.....	66
	25	Neurotoxin Injection for Parotid Gland Hypertrophy.....	69
	26	Neurotoxin Injection for Submandibular Gland Hypertrophy.....	71
	27	Neurotoxin Injection for Gustatory Sweating (Frey Syndrome) ...	73
▶	28	Neurotoxin Injection for Profusely Sweating Underarms	75
	29	Neurotoxin Injection for Profusely Sweating Scalp and Forehead ...	78
	30	Neurotoxin Injection for Profusely Sweating Hands.....	80
	31	Neurotoxin Injection for Profusely Sweating Feet.....	82
	32	Neurotoxin Injection for Chronic Migraines.....	84
	33	Management of Neurotoxin Injection Complications	88
Section IV Introduction to Fillers			
	34	Fillers Overview.....	92
▶	35	Anesthesia Techniques.....	95
	36	Filler Injection Methods	98
	37	Choosing the Right Filler	101
Section V Filler Injection Techniques			
▶	38	Filler Injection for Nasolabial Folds.....	107
	39	Filler Injection with Polymethyl Methacrylate (Bellafill)	111
▶	40	Fine Line Fillers and Skin Boosters	114
▶	41	Filler Injection for Marionette Lines	117
▶	42	Filler Injection for Lip Augmentation.....	119
▶	43	Filler Injection for Elevating the Oral Commissures.....	123
▶	44	Filler Injection for Vertical Lip Lines.....	126
▶	45	Filler Injection for Glabellar Frown Lines	128
	46	Filler Injection for Forehead Wrinkles.....	130
▶	47	Filler Injection for Tear Trough Deformity	134
	48	Filler Injection for Sunken Upper Eyelids.....	137
▶	49	Filler Injection for Lateral Brow Lift.....	139

▶	50	Filler Injection for Sunken Temples	141
▶	51	Filler Injection for Nonsurgical Rhinoplasty	144
▶	52	Filler Injection for Nasal Valve Stenting.....	150
▶	53	Filler Injection for Medial Midface Hollowing.....	152
▶	54	Filler Injection for Cheekbone Augmentation	155
▶	55	Filler Injection for Sunken Cheeks.....	158
▶	56	Filler Injection for Cheek Lift: de Maio Technique	161
	57	Filler Injection for Chin Augmentation.....	164
▶	58	Filler Injection for the Mental Crease.....	167
▶	59	Filler Injection for Jawline Rejuvenation.....	169
	60	Filler Injection for Mandibular Angle Augmentation	171
▶	61	Filler Injection for Earlobe Rejuvenation	173
	62	Filler Injection for Acne Scars	175
▶	63	Filler Injection for Aging Hands	178
▶	64	Filler Injection with Poly-L-Lactic Acid for Facial Volumizing (Sculptra)	180
	65	Filler Injection with Poly-L-Lactic Acid for the Décolleté	183
	66	The “Liquid Facelift”	186
	67	Gender-Specific Injections	188
	68	Management of Filler Injection Complications	189
		Section VI Fat-Dissolving Injections	
▶	69	Submental Fat Reduction	196
		Section VII Appendices	
		Appendix A: Neurotoxin/Filler Injection Techniques by Advancing Difficulty and Injector’s Experience	202
		Appendix B: Sample Informed Consent Form for Neurotoxin Injections.....	204
		Appendix C: Sample Informed Consent Form for Filler Injections.....	205
		Appendix D: Sample Informed Consent Form for Kybella Treatment	206
		Index.....	207

Foreword

Dr. Theda C. Kontis and Dr. Victor G. Lacombe have now published their combined experiences in this second edition of their practical handbook, *Cosmetic Injection Techniques*. The first edition was not only a bestseller but also had such quality videos that they were the most accessed videos in all of Thieme's library. The authors have again done a superb job in making facial tissue "transparent" for everyone interested in this increasingly important subject area. New subjects covered include the injectable consultation, choosing the right filler, neurotoxin and filler treatment for the décolleté, filler to the mandibular angle and jawline, the de Maio technique for midface volumization, neurotoxins for sweaty scalps and foreheads, fillers for fine lines, and gender-specific indications/injections. With the new use of sodiumdeoxycholate there is a further section on submental fat injections.

Cosmetic surgeons have the privilege of using transcutaneous treatments to restore patients' faces to their natural best. This book with its videos is a labor of love written by highly respected authors who discuss variations in techniques from the East and the West Coasts of the United States. I recommend it to all readers who choose to review their treatment plans from start to finish and who value learning from experts who teach with passion as well as knowledge.

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Reconstructive Surgery
Clinical Professor, Department of Ophthalmology
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Preface

I hear and I forget.

I see and I remember.

I do and I understand.

– attributed to Confucius (551–479 BCE)

We are pleased to present this revised second edition of *Cosmetic Injection Techniques: A Text and Video Guide to Neurotoxins and Fillers*. This new edition includes new fillers and new techniques as well as information on fat-dissolving injections. The accompanying videos have also been updated. Our readers found the first edition to be a handy quick-reference guide as well as a guide to new injection techniques. Patients in the office have enjoyed looking through this text so they may better understand the injections they are about to receive, and injectors have found the diagrams to be useful for patient education.

The number of non-surgical facial enhancements has continued to skyrocket since our first edition was published. As a consequence of patient demand, many physicians, nurses, and physician assistants have begun to treat such patients. This book, with its accompanying videos, is meant to be a guide and quick reference for the many professionals and paraprofessionals who have become facial injectors. It is not, however, a training manual for the naive injector. We highly discourage the novice injector from using this book as a primer on injections. In our opinion, nothing can replace training that is offered by courses and by one-on-one preceptorships.

This book is designed to augment the knowledge of a beginner injector and to train the experienced injector in how to perform “finesse” injections. The face can be shaped and minor irregularities and asymmetries improved by performing the techniques we describe. In addition, we hope to help the injector “look through” the skin to the underlying anatomy. This will help with both the targets of injection and the important structures to avoid. The authors are aware that there is more than one way to treat a given anatomic region. It was our aim, by having authors from two very different locales (the East and the West Coasts of the United States) and different practices, to describe the “best” injection technique by comparing our techniques of injection. In cases where the authors’ techniques differ markedly, both techniques are presented.

The products described herein are all U.S. Food and Drug Administration (FDA)-approved fillers and neurotoxins; however, most of the techniques described are considered “off-label” uses of the products. The doses of products described serve as a general guide for injection. While the utmost care was taken to assure the accuracy of the dosages listed, we urge injectors to use their best judgment or experience in the unlikely event that a misprint suggests an inappropriate dose. The comments we make about specific products are often our opinion derived from clinical observation. Others may have different observations clinically, and we respect these variations in clinical practices and results.

We realize that this book will be utilized by injectors with differing skill levels. In an attempt to promote safety in the use of these products, we have devised a rating scale for each technique. Each injection technique is evaluated in terms of difficulty for the trainer, risks involved in performing the injection, and patient satisfaction with the results. Appendix A lists the chapters by degree of difficulty, as a cross reference for injectors who would like to safely advance to more challenging injection techniques. The rating system is summarized as follows:

Degree of difficulty for the injector:

- Easy
- Intermediate
- Advanced
- Expert (only expert injectors should attempt these injections)

Patient satisfaction with the procedure:

- Variable results, results may be subtle
- Good results, patients usually pleased
- High patient satisfaction, predictable results

Risks of complications:

- Low
- Medium
- High

The products described in this book include Botox, Dysport, Xeomin, Restylane, Restylane Lyft, Restylane Silk, Restylane Refyne, Restylane Defyne, Juvéderm Volbella, Juvéderm Vollure, Belotero, Radiesse,

Sculptra, and Bellafill. These products are the most commonly used fillers and neurotoxins at the time this manual is being written. New products are continually being developed and may be available by the time of publication. However, because we have no experience with these new products, they are necessarily not described in this second edition. Experienced injectors, however, will be able to extrapolate the techniques and dosing strategies described in this book to newer products, if they so desire.

Disclosures: Theda C. Kontis is a speaker/trainer for Allergan and for Galderma. Victor G. Lacombe is a

speaker/trainer for Allergan and for Galderma and served as a principal investigator for Juvéderm Voluma.

Disclaimer: The material presented is a compilation of the clinical experiences of the authors. Off-label uses of FDA-approved products are described. A qualified health care professional should be consulted before using any therapeutic procedure discussed. Readers should verify all information and data before treating patients or employing any therapies described in this publication.

Acknowledgments

The authors believed that a simplified, well-illustrated, and thorough guide to injectables was needed in the medical literature. The editors at Thieme Publishers, in particular Timothy Hiscock, trusted our vision, and in the first edition we produced one of the best-selling books and most accessed videos in Thieme's collection. We were delighted when asked to produce this second edition.

We appreciate the editorial support and assistance from J. Owen Zurhellen and Sue Hodgson at Thieme,

who kept the project moving forward. The quality of this book has much to do with the fine artwork of our medical illustrator, Sarah E. Faris, who graciously agreed to continue the work in this edition. Her attention to detail and artistic skill made this textbook one that is not only thorough but easy to read and understand.

Finally, and most importantly, we thank our patients who have agreed to have their procedures filmed so that medical professionals can learn safe and effective injection techniques.

Menu of Accompanying Videos

Video 6.1 Neurotoxin Injection for Glabellar Frown Lines

Video 6.2 Neurotoxin Injection for Glabellar Frown Lines

Video 6.3 Neurotoxin Injection for Glabellar Frown Lines

Video 6.4 Neurotoxin Injection for Glabellar Frown Lines, Forehead Wrinkles, Smile Lines, and Crow's Feet

Video 6.5 Neurotoxin Injection for Glabellar Frown Lines, Forehead Wrinkles, and Lower Eyelid Roll

Video 6.6 Neurotoxin Injection for Glabellar Frown Lines and Forehead Wrinkles

Video 6.7 Neurotoxin Injection for Glabellar Frown Lines and Dimpled Chin

Video 6.8 Neurotoxin Injection for Glabellar Frown Lines

Video 6.9 Neurotoxin Injection for Glabellar Frown Lines

Video 6.10 Neurotoxin Injection for Glabellar Frown Lines

Video 7.1 Neurotoxin Injection for Forehead Wrinkles

Video 7.2 Neurotoxin Injection for Forehead Wrinkles

Video 7.3 Neurotoxin Injection for Forehead Wrinkles

Video 7.4 Neurotoxin Injection for Forehead Wrinkles

Video 7.5 Neurotoxin Injection for Glabellar Frown Lines, Forehead Wrinkles, Smile Lines, and Crow's Feet

Video 7.6 Neurotoxin Injection for Glabellar Frown Lines and Forehead Wrinkles

Video 7.7 Neurotoxin Injection for Glabellar Frown Lines, Forehead Wrinkles, and Lower Eyelid Roll

Video 7.8 Neurotoxin Injection for Forehead Wrinkles

Video 7.9 Neurotoxin Injection for Forehead Wrinkles

Video 8.1 Neurotoxin Injection for Glabellar Frown Lines, Forehead Wrinkles, Smile Lines, and Crow's Feet

Video 8.2 Neurotoxin Injection for Lower Eyelid Roll

Video 8.3 Neurotoxin Injection for Smile Lines and Crow's Feet

Video 8.4 Neurotoxin Injection for Smile Lines and Crow's Feet

Video 8.5 Neurotoxin Injection for Smile Lines and Crow's Feet

Video 9.1 Neurotoxin Injection for Lateral Brow Lift

Video 10.1 Neurotoxin Injection for Chemical Brow Lift

Video 10.2 Neurotoxin Injection for Chemical Brow Lift

Video 11.1 Neurotoxin Injection for Glabellar Frown Lines, Forehead Wrinkles, and Lower Eyelid Roll

Video 12.1 Neurotoxin Injection for Bunny Lines

Video 13.1 Neurotoxin Injection for Nasal Tip Lift

Video 15.1 Neurotoxin Injection for Elevating the Oral Commissures

Video 16.1 Neurotoxin Injection for Lip Lift

Video 17.1 Neurotoxin Injection for Smoker's Lines

Video 18.1 Neurotoxin Injection for Gummy Smile

Video 19.1 Neurotoxin Injection for Dimpled Chin

Video 19.2 Neurotoxin Injection for Glabellar Frown Lines and Dimpled Chin

Video 19.3 Neurotoxin Injection for Elevating the Oral Commissures and for Dimpled Chin

Video 19.4 Neurotoxin Injection for Elevating the Oral Commissures and for Dimpled Chin

Video 19.5 Neurotoxin Injection for Dimpled Chin

Video 20.1 Neurotoxin Injection for Platysmal Banding

Video 21.1 Neurotoxin Injection for Necklace Lines

Video 22.1 Neurotoxin Injection for the Décolleté

Video 23.1 Neurotoxin Injection for Nefertiti Neck Lift

Video 24.1 Neurotoxin Injection for Masseter Hypertrophy

Video 24.2 Neurotoxin Injection for Masseter Hypertrophy

Video 28.1 Neurotoxin Injection for Profusely Sweating Underarms

Video 35.1 Dental Block 1

Video 35.2 Dental Block 2

Video 38.1 Filler Injection for Nasolabial Folds and Elevating the Oral Commissures

Video 38.2 Filler Injection for Nasolabial Folds, Marionette Lines, and Elevating the Oral Commissures

Video 38.3 Filler Injection for Nasolabial Folds, Marionette Lines, and Elevating the Oral Commissures

Video 38.4 Filler Injection for Nasolabial Folds, Marionette Lines, Elevating the Oral Commissures, and Jawline Rejuvenation

Video 38.5 Filler Injection for Nasolabial Folds, Marionette Lines, and Jawline Rejuvenation

Video 38.6 Filler Injection for Nasolabial Folds, Marionette Lines, Elevating the Oral Commissures, and Mental Crease

Video 38.7 Filler Injection for Nasolabial Folds, Elevating the Oral Commissures, Tear Trough Deformity, and Sunken Cheeks

Video 38.8 Filler Injection for Nasolabial Folds, Marionette Lines, and Jawline Rejuvenation

Video 38.9 Filler Injection for Nasolabial Folds, Elevating the Oral Commissures, Mental Crease, and Jawline Rejuvenation

Video 38.10 Filler Injection for Nasolabial Folds

Video 40.1 Fillers for Fine Lines and Skin Boosters

Video 40.2 Fillers for Fine Lines and Skin Boosters

Video 41.1 Filler Injection for Marionette Lines

Video 41.2 Filler Injection for Marionette Lines, Lip Augmentation, and Elevating the Oral Commissures

Video 41.3 Filler Injections for Nasolabial Folds, Marionette Lines, and Jawline Rejuvenation

Video 41.4 Filler Injections for Nasolabial Folds, Marionette Lines, and Jawline Rejuvenation

Video 41.5 Filler Injections for Nasolabial Folds, Marionette Lines, Elevating the Oral Commissures, and Mental Crease

Video 41.6 Filler Injections for Nasolabial Folds, Marionette Lines, Elevating the Oral Commissures, and Jawline Rejuvenation

Video 42.1 Filler Injection for Lip Augmentation

Video 42.2 Filler Injection for Marionette Lines, Lip Augmentation, and Elevating the Oral Commissures

Video 42.3 Filler Injection for Lip Augmentation, Elevating the Oral Commissures, and for Vertical Lip Lines

Video 42.4 Filler Injection for Lip Augmentation

Video 43.1 Filler Injection for Nasolabial Folds, Marionette Lines, Elevating the Oral Commissures, and Mental Crease

Video 43.2 Filler Injection for Lip Augmentation and for Elevating the Oral Commissures

Video 43.3 Filler Injection for Nasolabial Folds, Elevating the Oral Commissures, Tear Trough Deformity, and Sunken Cheeks

Video 43.4 Filler Injection for Nasolabial Folds, Marionette Lines, Elevating the Oral Commissures, and Jawline Rejuvenation

Video 43.5 Filler Injection for Marionette Lines, Lip Augmentation, and Elevating the Oral Commissures

Video 43.6 Filler Injection for Lip Augmentation, Elevating the Oral Commissures, and for Vertical Lip Lines

Video 43.7 Filler Injection for Elevating the Oral Commissures

Video 43.8 Filler Injection for Elevating the Oral Commissures

Video 43.9 Filler Injection for Elevating the Oral Commissures

Video 43.10 Filler Injection for Elevating the Oral Commissures

Video 44.1 Filler Injection for Lip Augmentation, Elevating the Oral Commissures, and for Vertical Lip Lines

Video 44.2 Filler Injection for Vertical Lip Lines

Video 44.3 Filler Injection for Vertical Lip Lines

Video 45.1 Filler Injection for Glabellar Frown Lines

Video 47.1 Filler Injection for Tear Trough Deformity and Cheekbone Augmentation

Video 47.2 Filler Injection for Tear Trough Deformity and Medial Midface Hollowing

Video 49.1 Filler Injection for Lateral Brow Lift

Video 49.2 Filler Injection for Lateral Brow Lift

Video 49.3 Filler Injection for Lateral Brow Lift

Video 50.1 Filler Injection for Sunken Temples

Video 51.1 Filler Injection for Non-Surgical Rhinoplasty

Video 52.1 Filler Injection for Nasal Valve Stenting

Video 53.1 Filler Injection for Medial Midface Hollowing

Video 54.1 Filler Injection for Cheekbone Augmentation

Video 54.2 Filler Injection for Cheekbone Augmentation

Video 55.1 Filler Injection for Nasolabial Folds, Elevating the Oral Commissures, Tear Trough Deformity, and Sunken Cheeks

Video 56.1 Filler Injection for Cheek Lift: The de Maio Technique

Video 58.1 Filler Injection for the Mental Crease

Video 58.2 Filler Injection for Nasolabial Folds, Marionette Lines, Elevating the Oral Commissures, and Mental Crease

Video 59.1 Filler Injection for Jawline Rejuvenation

Video 59.2 Filler Injection for Nasolabial Folds, Marionette Lines, and Jawline Rejuvenation

Video 59.3 Filler Injection for Nasolabial Folds, Marionette Lines, and Jawline Rejuvenation

Video 59.4 Filler Injection for Jawline Rejuvenation

Video 61.1 Filler Injection for Earlobe Rejuvenation

Video 63.1 Filler Injection for Aging Hands

Video 63.2 Filler Injection for Aging Hands

Video 64.1 Filler Injection with Poly-L-Lactic Acid for Facial Volumizing (Sculptra)

Video 64.2 Filler Injection with Poly-L-Lactic Acid for Facial Volumizing (Sculptra)

Video 69.1 Injection Technique for Submental Fat Reduction

Section I
Introduction to Injectables

1	The Consultation	2
2	The Physicians Aesthetic Coalition for Injectable Safety	4



1

The Consultation

Initial Evaluation

A combination of factors can lead a patient to visit a provider for injectable treatment or evaluation. Often it is a result of the patient looking or feeling tired, or being told that they give that impression to others. Sometimes it is the drive for youthful appearance or for simply a different look (whether that is fewer wrinkles, fuller lips, or higher cheek bones). The motivation for change may be preparation for an event that is fast approaching, like a wedding or reunion, or a longer-term goal, such as maintaining a competitive edge in the job market. All of these factors must be determined in the first discussions prior to developing the plan. The time frame for treatment and recovery, longevity of results, and patient expectations must be part of the planning.

Anatomic Considerations

The injector must have a thorough and comprehensive understanding of facial bone structure, muscle location and function, skin structure and thicknesses, as well as the location of nerve and vascular supplies to the face and neck. Greater familiarity will lead to increased comfort, sophistication, and talent with both diagnosing and treating the changes seen in facial aging. Most aging changes are a result of facial fat loss and redistribution away from key areas of the face, which leads to

sagging, undesirable folds, and skeletonization. Loss of fat in the forehead and temples leads to dropping brows and hollowing of the temples. Loss of fat on the cheeks and around the eyes causes dark circles under the eyes and drooping of the malar skin, creating deeper nasolabial folds as well as hollowing, melolabial folding, and jowling. Buccal fat loss contributes to a gaunt look in the lower cheek and can create the effect of a “pouch” lateral to the mouth (which is really just a prominent modiolus due to hollowing anteriorly and posteriorly). Intrinsic changes of the skin due to solar exposure and collagen and elastin loss can accentuate these changes. Recognizing, understanding, and explaining to patients the global effects of these anatomic changes will greatly facilitate the consultation.

Consultation Techniques

A mirror placed on a desk in front of the patient (or a hand-held mirror) is used so that the patient’s facial features can be analyzed, both at rest and in animation. It is important to ask patients about what bothers them the most when they look into the mirror. Sometimes the practitioner’s trained eye targets an area that turns out not to bother the patient at all. Patients are happiest when we listen to and address *their* concerns first. After we discuss how we can (or cannot) improve

what bothers them, then we can help them develop a plan for total facial rejuvenation, if they so desire.

Pointing out facial asymmetries or irregularities should be done as part of the pre-injection teaching. Patients may not see their asymmetries pre-injection but will note them post-injection. Photographic documentation is essential to document the pre-injection appearance. Three-dimensional photography is another helpful tool that can be used as an objective means to demonstrate areas of concavity and asymmetry as well as skin changes.

Once the need for treatment is established, a summary of the tools available, including neurotoxins for relaxing, fillers for volume restoration, skin boosting, and line filling, is in order. Patients may have heard of the different brand names but are often ignorant of where they go, how they work, and how long the results will last. One should develop clear, concise talking points on the products used, which include safety and recovery profiles. Next, the injector should recommend the quantity of product necessary for a complete correction and a conservative estimate as to when that would need to be re-treated. This should also be provided in written estimate form to avoid any later confusion. An example would be 50 units of Botox to treat the glabella, forehead, and crow's feet, and six syringes of hyaluronic acid (HA) filler to treat under eyes, upper cheek bones, melolabial folds, lip lines, and jawline. The patient should understand that the injections can be done either all at once or in stages, as the patient's budget allows. This would complete the consultation and leave the patient well educated and not feeling like they were pressured.

Some patients will want to be injected at their initial consultation, and others

will just want to develop a plan by gaining information and having their questions answered. The initial consultation can be overwhelming for a patient new to injectables. It is important to proceed slowly at first. If a patient is not a candidate for neurotoxins or fillers, be honest about it.

Precautions

The injector must listen to patients and take cues from their body language about how comfortable they are with the concept of injectables and how willing they are to proceed. Some patients are very timid and self-conscious about discussing aesthetic issues. In those cases, it is best not to overwhelm them with too many things that they did not initially seek advice about lest they be scared away. Other patients may be open to a clinician's advice as to what is available and will want to learn all that is possible. Listen carefully to patients and address their primary aesthetic concerns first.

Body dysmorphic disorder (BDD) is a syndrome that all injectors should understand. Know that BDD patients often desire our expertise: these patients have abnormal body perceptions, and small abnormalities are magnified in their mind. It is difficult, if not impossible, to please such patients, so proceed with caution. In practice, it is more likely to regret injecting someone than to regret *not* injecting them!

Additional Reading

- [1] Coleman SR, Grover R. The anatomy of the aging face: volume loss and changes in 3-dimensional topography. *Aesthet Surg J.* 2006; 26 1S:S4-S9
- [2] Crerand CE, Menard W, Phillips KA. Surgical and minimally invasive cosmetic procedures among persons with body dysmorphic disorder. *Ann Plast Surg.* 2010; 65(1):11-16
- [3] Matarasso A, Nikfarjam J, Abramowitz L. Incorporating Minimally Invasive Procedures into an Aesthetic Surgery Practice. *Clin Plast Surg.* 2016; 43(3):449-457

2

The Physicians Aesthetic Coalition for Injectable Safety

The increased popularity of injectable procedures has been accompanied by an unfortunate increase in the performance of these procedures by unqualified personnel. It is the authors' concern that the use of this book by untrained individuals could produce disastrous results. The Physicians Aesthetic Coalition (PAC) was created to provide information on qualified injectors, on materials approved by the U.S. Food and Drug Administration (FDA), and on injectable training that can be obtained by qualified professionals. We direct patients and injectors to <http://www.physiciansaestheticcoalition.org> for appropriate information about the safe use of injectable materials.

The PAC is represented by over 5,000 board-certified members of the American Society for Aesthetic Plastic Surgery (ASAPS), the American Society for Dermatologic Surgery (ASDS), the American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS), and the American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS). We encourage professionals to utilize the PAC website for up-to-date information about injectables and injectable safety, laws, and ethical guidelines pertaining to the purchase of injectables, research and statistics, and courses available for training in the use of injectables.

Section II

Introduction to Neurotoxins

3	Neurotoxins Overview	6
4	Neurotoxin Preparation	8
5	Instrumentation for Neurotoxin Injections	9



3

Neurotoxins Overview

Action

Peripheral neuromuscular blocking agents.

Mechanism of Action

Botulinum toxins irreversibly bind to the presynaptic terminal of the neuromuscular junction and prevent release of acetylcholine, thereby preventing muscle contraction.

Botulinum Toxin A (BoNTA) Formulations

Botox: OnabotulinumtoxinA (BoNTA-ONA)

- 100 BU (Botox units) per vial (also contains 0.5 mg human serum albumin, 0.9 mg sodium chloride)
- Vacuum dried
- Store in freezer until reconstituted; refrigerate after reconstitution

Dysport: AbobotulinumtoxinA (BoNTA-ABO)

- 300 DU (Dysport units) per vial (also contains 0.125 mg human serum albumin, 2.5 mg lactose)
- Lyophilized
- Store in freezer until reconstituted; refrigerate after reconstitution

Xeomin: IncobotulinumtoxinA (BoNTA-INC)

- 100 XU (Xeomin units) per vial (also contains 1.0 mg human albumin, 4.7 mg sucrose)
- Lyophilized
- Store at room temperature; refrigerate after reconstitution

Neuronox

- Approved in 2004 by the South Korean Ministry of Food and Drug Safety (MFDS), manufactured by Medy-Tox Inc. (Seoul, Korea)
- Not U.S. FDA-approved in the United States
- 50, 100, and 200 U vials available (100 U contains 0.5 mg human serum albumin and 0.9 mg sodium chloride)
- Lyophilized
- Conversion ratio appears to be 1:1 with Botox
- Store in freezer until reconstituted; refrigerate after reconstitution

PurTox

- Pending FDA approval
- Similar to Xeomin without complexing proteins