Dyston®

| Botulinum Toxin Type A |

Say Hello to a Pain-Free Life

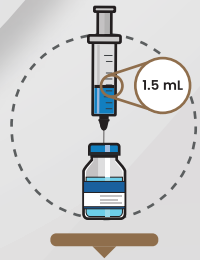
Properties and Characteristics of Dyston®

Active Substance	Botulinum Toxin Type A
Excipients	Human Serum Albumin, Lactose
Presentation	Single-use, Sterile Vial for Reconstitution Intended for IM Injection
Units per Vial	300 U, 500 U

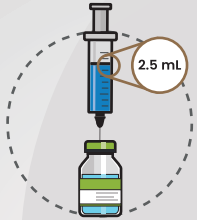
Diluent Added to 300 Unit Vial (mL)	Resulting Dose Units per 0.1 mL
0.6	50
1.5	20
2.5	12
3.0	10

Diluent Added to 500 Unit Vial (mL)	Resulting Dose Units per 0.1 mL
1	50
2	25
2.5	20
3.3	15
5	10

Suggested Diluent	Preservative-free 0.9% NaCl for Injection
Storage Before Reconstitution	2-8˚C
Storage After Reconstitution	2-8˚C for 8 hours



300 U
Vial



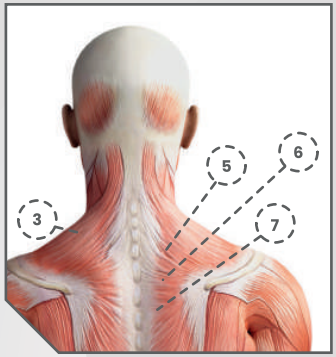
500 U
Vial

Cervical Dystonia

Cervical dystonia (CD), previously known as spasmodic torticollis, is characterized by involuntary contractions of neck and upper shoulder muscles, resulting in abnormal postures or movements (or both) of the neck, shoulder, and head.

Treatment of cervical dystonia (CD) has been the most studied of all the potential applications of botulinum toxin type A (BoNT-A)[1].

Literature review of abobotulinumtoxinA demonstrated that routine use of abobotulinumtoxinA in CD is well-established and effective. At recommended doses, benefits were sustained for up to 8-12 weeks, with significant improvements in TWSTRS *and Tsui scores as well as pain and QoL (quality of life)[2].



	Muscle	Dosage
1	SEMISPINALIS CAPITIS	50 to 250 Units
2	STERNOCLEIDOMASTOID	50 to 350 Units Median: 125 Units
3	SPLENIUS CAPITIS	75 to 450 Units
4	LONGISSIMUS	100 to 200 Units Located beneath the splenius capitis
5	TRAPEZIUS	50 to 300 Units
6	SCALENUS (MEDIUS AND ANTERIOR)	50 to 300 Units
7	LEVATOR SCAPULAE	50 to 200 Units

Spasticity in Adults

Spasticity, particularly after brain lesions, tends to be focal in nature. Thus, systemic medication is often inappropriate and treatment needs to concentrate on the relevant overactive muscle groups— hence the potential value of botulinum[3].

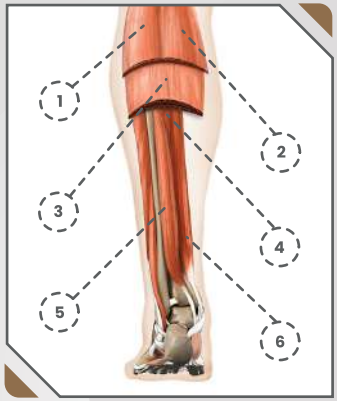
Lower Limb Spasticity

Several neurological disorders may give rise to lower limb spasticity (LLS) including stroke and brain/spinal cord injury, cerebral palsy, and multiple sclerosis. AbobotulinumtoxinA, is effective in reducing muscle tone and improving spasticity and functional outcomes in adults with LLS, as shown in several randomized, double-blind studies[4].

LOWER LIMB SPASTICITY
1000 to 1500 Units*

MAXIMUM TOTAL DOSE
1500 Units* for upper and lower limb combined

	Muscle	Dosage	Injection Site(s)
1	GASTROCNEMIUS (LATERAL HEAD)	100 to 150 Units	1
2	GASTROCNEMIUS (MEDIAL HEAD)	100 to 150 Units	1
3	SOLEUS	330 to 500 Units	3
4	TIBIALIS POSTERIOR	200 to 300 Units	2
5	FLEXOR HALLUCIS LANGUS	70 to 200 Units	1
6	FLEXOR DIGITORUM LONGUS	130 to 200 Units	1-2



*Divided among selected muscles at a given treatment session.[1]

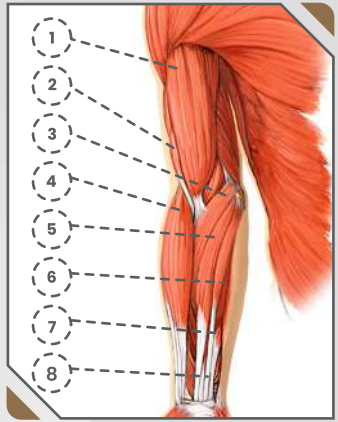
Upper Limb Spasticity

Studies have shown a favorable safety profile and continuous improvement in active movements and perceived and active function were associated with repeated abobotulinumtoxinA injections in upper limb muscles [5].

UPPER LIMB SPASTICITY
500 to 1000 Units*

MAXIMUM TOTAL DOSE
1500 Units* for upper and ower limb combined

	Muscle	Dosage	Injections Site(s) Per muscle
1	BICEPS BRACHII	200 to 400 Units	1-2
2	BRACHIALIS	200 to 400 Units	1-2
3	PRONATOR TERES	100 to 200 Units	1
4	BRACHIORADIALS	100 to 200 Units	1-2
5	FLEXOR CARPI RADIALIS	100 to 200 Units	1-2
6	FLEXOR CARPI ULNARIS	100 to 200 Units	1-2
7	FLEXOR DIGITORUM PROFUNDUS	100 to 200 Units	1-2
8	FLEXOR DIGITORUM SUPERFICIALIS	100 to 200 Units	1-2



*Divided among selected muscles at a given treatment session.

Spasticity in Pediatric Patients

Dyston may help reduce muscle stiffness and improve your child's ability to move the affected limb(s). With effects that can last up to 16 weeks or longer, Dyston can provide relief from muscle stiffness with a chance to receive less injections per year.

Pediatric Upper Limb Spasticity

Pediatric upper limb spasticity is common in children and recent studies have shown that botulinum toxin type A can be very useful and effective in dealing with pediatric upper limb spasticity.

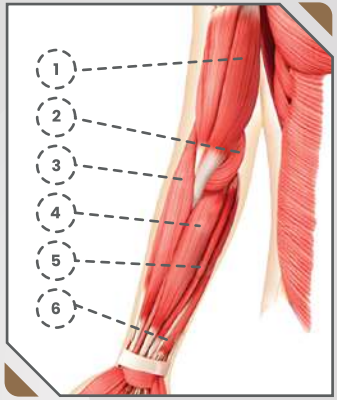
UPPER LIMB SPASTICITY

8 t0 16 Units/kg per limb, with total dose not to exceed 16 Units/kg or 640 Units, whichever is lower.

MAXIMUM TOTAL DOSE

30 Units/kg or 1000 Units for upper and lower limb combined, whichever is lower.

	Muscle	Dosage	Injections Site(s) Per muscle
1	BICEPS BRACHII	3 to 6 Units/kg	Up to 2
2	PRONATOR TERES	1 to 2 Units/kg	1
3	BRACHIORADIALIS	1.5 to 3 Units/kg	1
4	FLEXOR CAPRI RADIALIS	2 to 4 Units/kg	Up to 2
5	FLEXOR DIGITORUM SUPERFICIALIS RADIALIS	1.5 to 3 Units/kg	Up to 4
6	FLEXOR CARPI ULNARIS	1.5 to 3 Units/kg	1



*Divided among selected muscles at a given treatment session.[1]

Pediatric lower limb spasticity

Pediatric lower limb spasticity is common in children and recent studies have shown that botulinum toxin type A can be very useful and effective in dealing with pediatric lower limb spasticity.

	Muscle	Dosage	Injections Site(s) Per muscle
1	GASTROCNEMIUS	6 to 9 Units/kg	up to 4
2	SOLEUS	4 to 6 Units/kg	up to 2

UNILATERAL INJECTION

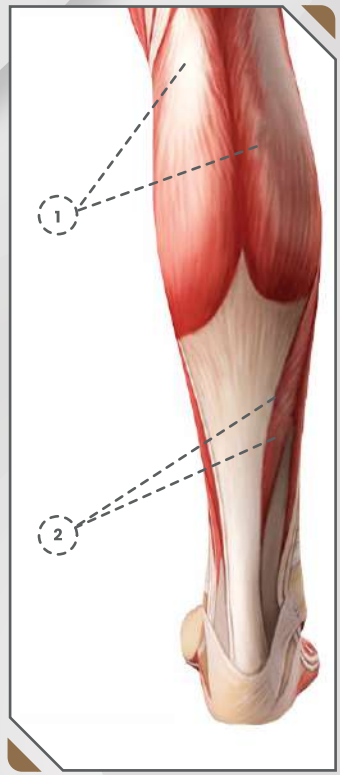
10 to 15 Units/kg per limb, with total dose not to exceed 15 Units/kg or 1000 Units, whichever is lower.

BILATERAL INJECTION

10 to 15 Units/kg per limb, with total dose not to exceed 30 Units/kg or 1000 Units, whichever is lower.

MAXIMUM TOTAL DOSE

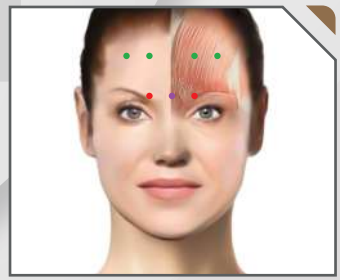
30 Units/kg or 1000 Units for upper and lower limb combined, whichever is lower.

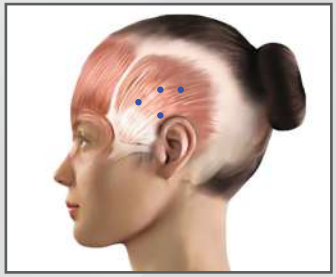


Chronic Migraine

Botulinum toxin Type A is well known for its ability to reduce and smooth facial wrinkles, but it can also be an effective treatment for the prevention of chronic migraine.
The use of botulinum toxin type A for chronic migraine consists of 31 injections in the head and neck every 12 weeks. Injection sites include the forehead, temples, back of the head, upper neck, and shoulders. Each treatment takes less than 10 minutes, and the injections are generally well tolerated.

	Muscle	Injection Site(s)
	Frontalis[b]	60 Units divided in 4 sites
	Corrugator[b]	30 Units divided in 2 sites
	Procerus	15 Units in 1 site
	Temporalis[b]	120 Units divided in 8 sites
	Occipitalis[b]	90 Units divided in 6 sites
	Cervical paraspinalis[b]	60 Units divided in 4 sites
	Trapezius[b]	90 Units divided in 6 sites
Total Dose		465 Units divided in 31 sites





Dyston®

Dyston®

Celebrate **Beauty,**
Celebrate Life

References

1. Ney JP, Joseph KR. Neurologic uses of botulinum neurotoxin type A. Neuropsychiatr Dis Treat. 798-785:(6)3;2007.
2. Fasano A, Paramanandam V, Jog M. Use of AbobotulinumtoxinA in Adults with Cervical Dystonia: A Systematic Literature Review. Toxins (Basel). 470:(8)12;2020. Published 2020 Jul 24.
3. Davis EC, Barnes MP. Botulinum toxin and spasticityJournal of Neurology, Neurosurgery & Psychiatry 147-69:143;2000.
4. Esquenazi A, Stoquart G, Hedera P, et al. Efficacy and Safety of AbobotulinumtoxinA for the Treatment of Hemiparesis in Adults with Lower Limb Spasticity Previously Treated With Other Botulinum Toxins: A Secondary Analysis of a Randomized Controlled Trial. PM R. 860-853:(9)12;2020.
5. Gracies JM, O'Dell M, Vecchio M, et al. Effects of repeated abobotulinumtoxinA injections in upper limb spasticity. Muscle Nerve. 254-245:(2)57;2018.
6. Heinen F, Desloovere K, Schroeder AS, Berweck S, Borggraefe I, van Campenhout A, Andersen GL, Aydin R, Becher JG, Bernert G, et al. The updated European consensus 2009 on the use of botulinum toxin for children with cerebral palsy. European Journal of Paediatric Neurology. 66-14:45;2010
7. Simpson DM, Hallett M, Ashman EJ, et al. Practice guideline update summary: Botulinum neurotoxin for the treatment of blepharospasm, cervical dystonia, adult spasticity, and headache: Report of the Guideline Development Subcommittee of the American Academy of Neurology. Neurology. 1826-1818:(19)86;2016.
8. Jost, Wolfgang H, and Klaus-Peter Valerius. Pictorial Atlas of Botulinum Toxin Injection: Dosage, Localization, Application. Surrey: Quintessence Books, 2008.

atra bio-cosmeceuticals

info@atrazistaray.com | dyston.official | Tel: 0942 600 1516