Information for Persons with Compromised Immune Systems

Some people are more vulnerable to contaminants in drinking water than the general population. Imuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Center for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791 or www.epa.gov/safewater/hotline.

Source Water Assessment and Protection

The Massachusetts DEP has prepared a Source Water Assessment Program (SWAP) Report for the Hyannis Water System. The report assesses the susceptibility of public water supplies to contamination and makes recommendations. This report is available from the Hyannis Water System located at 47 Old Yarmouth Road in Hyannis, the local Board of Health and also at the DEP website: http://www.mass.gov/dep/water/drinking/sourcewa.htm#reports.

A susceptibility ranking of HIGH was assigned to all wells in our system by the DEP due to the absence of hydrogeologic barriers, i.e., clay, in the Cape Cod Aquifer. There are activities and land uses within the Zone I, a 400 ft. radius around each well head, and the Zone II, the aquifer recharge area, that can contribute to drinking water contamination. Examples include local roads and power line easements in the Zone I, transportation corridors, residential septic systems, heating oil storage, household hazardous materials usage and storage, and stormwater from roads and lawns within the Zone II.

The Hyannis Water System was commended by the Massachusetts DEP for posting water protection signs, acquiring and protecting land within Zone I areas, and working with the Town of Yarmouth to protect Zone II areas

In conjunction with its certified operator, Suez, the Hyannis Water System is addressing the concerns stated in the SWAP Report and welcomes your input to our planning. If you have questions, please contact Michael Leahy at (508) 775-0063

This report was prepared by Suez for the Hyannis Water System. Additional copies of this report are available upon request; please contact (508) 775-0063 for additional copies.

Please contact: Hans Keijser, Supervisor, Water Supply Division at (508) 778-9617 extension 3502

Questions about this report

Water Supply Division.

The Hyannis Water System is operated and maintained by a private company, Suez, with oversight provided by the Town of Barnstable Department of Public Works,

Hyannis Water System

Association.

All chemicals used for the corrosion control are approved for water treatment by one or more of the following organizations: National Sanitation Foundation (NSF International) or Underwriters Laboratory, both accredited by the American National Standards Institute (ANSI). Chemicals also must meet the performance standards established by the American Water Works

Past commercial activities near the Hyannis Airport have contributed to the detection of Volatile Organic Compounds (VOCs) in the Maher well field. These chemicals are removed from the water using an aeration process and then adding a disinfectant to the water before it enters the distribution system.

Many drinking water sources in New England are naturally corrosive (pH of less than 7.0). This can cause active leaching of lead and copper into your water. To reduce this leaching, your water is chemically treated to raise the pH to neutral or slightly alkaline. Testing throughout the Hyannis Water System has demonstrated that this is an effective and safe treatment process.

Water Treatment
In our effort to supply safe, clean and healthy water to
the Hyannis communities, chemicals are added in safe
quantities to ensure that your water quality is consistently maintained.

Water System water quality challenges and capital improvements

In 2017 the Hyannis Water System continued to deal with water quality challenges, related capital improvements and planned projects.

A pilot study for the design of a needed Maher Filtration Facility was completed. A well re-activation project to test, permit and rebuild two existing wells at Straightway and Mary Dunn Road was initiated and a consulting engineering firm was contracted to initiate a comprehensive new source exploration program.

A cleaning and lining water main rehabilitation job was completed on West Main Street and a water main replacement project was started as part of the MassDOT safety improvements at the intersection of Bearse's Way and Rt 28 to upgrade pipes, valves, fire hydrants and water services.

The replacement of the Mary Dunn 1 water storage tank wood roof and associated site work on Mary Dunn Road was started and is planned to be completed by the summer of 2018



Annual Air Stripper Inspection

How Many Times a Day Do You Turn on the Faucet?

The average American home uses about 100 to 130 gallons of water a day. Did you know that only 1% of our in-home water use is for drinking? The majority of our daily water consumption, about 75%, is used in the bathroom. Did you know that 14% of in-home water use is wasted by leaking taps and toilets? Conserving water is as simple as repairing leaky faucets and toilets, taking shorter showers, not leaving water running while brushing teeth, washing hands, washing fruits and vegetables. Learn more about using water wisely at <a href="https://www.usepa.com/w

Using water wisely benefits you and the environment.

The Hyannis Water System meets all primary Water Quality Standards set forth by the United States Environmental Protection Agency and Massachusetts Department of Environmental Protection.

To ensure tap water is safe to drink, the Massachusetts Department of Environmental Protection (DEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by all public drinking water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health regulations establish the limits for contaminants in bottled water to provide the same protection for public health.

The Hyannis Water System continuously strives to produce the highest quality water that meets or surpasses water quality standards for safe drinking water. We monitor all our water sources and distribution system very closely. The standards that we operate under were enacted by the U. S. Congress as the Safe Drinking Water Act in 1974 and amended in 1986 and 1996.

Maintaining Water Quality

In the event of any emergency call: (508) 775-0063 Staff is available 24/7

Office Hours
Monday through Friday 8 AM to 5 PM
Saturday 8 AM to 12 PM

Water Supply Division. provided by the Barnstable Department of Public Works and distribution system. Oversight of the contract is to day operations of the public water supply treatment service, billing and all other duties required for the day painting, meter installation and maintenance, customer rehabilitation of two system wells per year, hydrant tion system, fire hydrants and gate valves, the complete services, inspection and maintenance of the distributhe system's pumping stations, cross connection control tions and maintenance of the water treatment plants and under SUEZ. The operations contract includes opera-November 16, 2015 United Water was consolidated ing the Hyannis Water System on July 1, 2009. As of United Water Environmental Services began operat-Hyannis Water System Operations

Hyannis Water System Operated by Suez 47 Old Yarmouth Road Hyannis, MA 02601-0326 (508) 775-0063



ANNUAL

WATER QUALITY REPORT

Water testing performed in calender year 2017

Hyannis Water System PWS ID: #4020004



Maintenance at the Maher Treatment Plant

Hyannis Water Board Stephen O'Neil, Chair Tom Holmes, Member Jonathan Jaxtimer, Member

water supply.

Water system interconnections are established with the Town of Yarmouth water system and the COMM. water system to have the ability to draw water as a backup

There are also four water storage tanks. Two located on Mary Dunn Road: Mary Dunn Tank # 1 - 370,000 gallons, Mary Dunn Tank # 2 - 1 million gallons, Maher - 800,000 gallons and Straightway - 400,000 gallons.

temporary interconnection on Phinneys Lane. interconnection at the Maher Treatment Plant and through a Water Department and delivered through the Yarmouth purchased from the Town of Yarmouth and the COMM Pond Well (4020004-06g). Additional source water is 09g), Straightway Well (4020004-12g), and the Simmons Well # 3 (4020004-08g), Mary Dunn Well # 4 (4020004-04g), Mary Dunn Well # 2 (4020004-05g), Mary Dunn Well # 3 (4020004-11g), Mary Dunn Well # 1 (4020004-(4020004-07g), Maher Well # 2 (4020004-02g), Maher 10g), Hyannisport Well (4020004-03g), Maher Well # 1 the Cape Cod Aquifer. The wells are: Airport # 1 (4020004-Barnstable and draw water from the Sagamore Lens, part of 11 groundwater wells that are located in the Town of approximately 9 square miles. The water is obtained from Hyannisport, and West Hyannisport comprising populated residential and commercial areas of Hyannis, The Hyannis Water System supplies the most densely

Where Does My Water Come From?

Barnstable website:

http://www.town.barnstable.ma.us/Hyannis

WaterBoard/?brd=Hyannis+Water+Board.
Should you ever have questions, we are available to assist you. Call Hans Keijser, Supervisor,
Water Supply Division at 508 778-9617.

information contained in this report.
Our meetings are open public meetings.
A schedule of these meetings is posted on the Town of

Opportunities for Public Participation We encourage you to share your thoughts with us on the

source water protection.

The Hyannis Water Board is proud to present its annual water quality report. The statistics in this report are based on testing done throughout 2017 as well as prior years. We hope you will find it helpful to know the sources of your water and the process by which safe drinking water is delivered to your home or business. We have maintained our high standards in an effort to continue delivering the best quality drinking water poscontinue delivering the best quality drinking water poscontinue delivering the best quality drinking water poscontinue delivering the challenges of

Report on Water Quality

DISTRIBUTION SYSTEM WATER QUALITY MCLG Month Detected MCL Violation Possible Source of Contaminatio Total Coliform Bacteria * 0% -1.2% amples Positiv Naturally present in the environment Human and animal fecal waste

						# of Sites		
		90th	Action		# of Sites	Above Action		
Lead & Copper	Dates Collected	Percentile	Level	MCLG	samples	Level	Violation	Possible Source of Contamination
	7/16/2016 thru							
Lead (ppb)	9/1/2016	0	15	0	35	0	No	Corrosion of household plumbing systems: Erosion of natural deposits
	7/16/2016 thru							
Copper (ppm)	9/1/2016	0.23	1.3	1.3	35	0	No	Corrosion of household plumbing systems: Erosion of natural deposits

ESTING FOR LEAD - If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service tes and home plumbing. Hyannis Water System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you are minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water has the hours of the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Holling or at http://www.epa.gov/safewater/lead.

		SUMMAR	RY OF FINISH	ED WAT	ER CHA	RACTERIS	STICS
Regulated Contaminants	Date(s) Collected	Highest Detect Value	Range Detected	MCL	MCLG	Violation	Possible Source of Contamination
Inorganic Contam	inants:					•	
Barium (ppm)	1/13/2015	0.019	0.014 - 0.019	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion o natural deposits
Arsenic (ppm)	1/13/2015	0.004	ND - 0.004	0.01	0.1	No	Run off from orchards; and from glass& electronics production wastes Erosion of natural deposits
Flouride (ppm)	1/13/2015	0.08	ND - 0.08	4	4	No	Discharge from fertilizer and aluminum factories; erosion of natural deposits.
Selenium (ppm)	1/13/2015	0.004	ND - 0.004	0.05	0.05	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Nitrate* (ppm)	4/19/2017	4.5	0.22 - 4.50	10	10	No	Runoff from fertilizer use: leaching from septic tanks; sewage; erosion of natural deposits
Perchlorate** (ppb)	7/12/2017	0.26	0.0 -0.26	2	-	No	Rocket propellants, fireworks, munitions, flares, blasting agents *(see note below)*
*Nitrate	levels may rise quick	s with the norm	iods of time because on all function of the thyro	f rainfall or ag id gland and	gricultural active thus has the p	vity. If you are ca	ge. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate ring for an infant, you should ask for advice from your health care provider. growth and development, causing brain damage and other adverse effects, do people with a hypothyroid condition are particularly susceptible to perchlorate
**Perchlorate (Various Chemical Abstract Service Registry Numbers (CASRN) for different chemical species)	toxicity.		sults are above the MD				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Organic Contami				,		(/	
Tetrachloroethylene (PCE) (ppb)	1/19/2017	0.71	ND - 0.71	5	-	No	Discharge from factories and dry cleaners
Bromodichloromethane (ppb)	7/12/2017	0.55	ND -0.55	NA	NA	No	By-product of drinking water chlorination
Chlorodibromomethane ppb)	4/19/2017	1.1	ND - 0.9	NA	NA	No	By-product of drinking water chlorination
Bromoform (ppb)	4/19/2017	1.5	ND - 1.5	NA	NA	No	By-product of drinking water chlorination
Chloroform (ppb)	Quarterly	2.4	ND - 2.4	ORSG 70	NA	No	By-product of drinking water chlorination
Stage 2 Disinfectants and Disir							
Chlorine (ppm)	3rd Quarter	0.80**	0.09 -1.3*	4	4	No	Water additive used to control microbes
TTHMs (Stage 2)							
[Total Trihalomethanes] (ppb)	Quarterly	6.2***	ND- 8.9	80	-	No	By-product of drinking water chlorination
HAA5s (Stage 2) Haloacetic Acids (HAA5) (ppb)	Quarterly	1.1***	ND - 1.6	60		No	By-product of drinking water chlorination (TT)

** Note highest detected value is highest Running Annual Average (RAA). ***Local Running Annual Average

* Note: THM ,HAA and Chlorine minimum and maximum levels in the ranges of results are site specific.							
Secondary Contaminants	Date(s) Collected	Highest Detect Value	Range Detected	SMCL	ORSG	Possible Source of Contamination	
Magnesium (ppm)	7/12/2017	4.03	1.7 - 4.03	-	-	Natural Mineral and Organic Matter	
Chloride (ppm)	7/12/2017	67	30 -67	250	NA	Natural Mineral, Road Salt	
Calcium (ppm)	7/12/2017	15	1.95 - 15	-	-	Natural Mineral and Organic Matter	
Iron (ppm)	7/12/2017	0.1	ND-0.10	300	NA	Erosion of Natural Deposits, and oxidation of iron components	
Manganese (ppb)*	7/12/2017	188	30- 188	50	300	Erosion of Natural Deposits	
Sodium (ppm)**	1/13/2015	37**	22 - 37	-	20	Road salting; erosion of natural deposits	
Potassium (ppm)	7/12/2017	17.8	1.4 - 17.8	-	-	Natural Mineral and Organic Matter	
Sulfate (ppm)	7/12/2017	17	6.7 - 17	250	250	Natural Sources	
Alkalinity (ppm)	7/12/2017	56	35 - 56	-		Natural Sources	
Odor (ton)	7/12/2017	2	ND-2	3		Naturally occurring organic materials that form ions when in water; seawater influence	
Hardness (ppm)	7/12/2017	54.1	11.87-54.1	-		Natural Sources	
Total Dissolved solids (ppm)	7/12/2017	230	120-230	500		Runoff and leaching from natural deposits; seawater influence	
PH	7/12/2017	7.6	6.4-7.6	6.5-8.5		Runoff and leaching from natural deposits; seawater influence	
Color (CU)	4/82014	5	0-5.0	15			
Turbidity (NTU)	7/12/2017	0.33	0-0.33	-		Soil runoff	
Zinc (ppm)	7/12/2017	0.414	0.18 - 0.414	5	NA	Erosion of Natural Deposits, and Industrial Discharge	
*EPA has established a lifetime health advisory (HA) for manganese at 300ppb and an acute at 1000ppb							

m is a naturally-occurring common element found in soil and water. It is necessary for the normal functioning of regulating fluids in human systems. Some people, however, have difficulty regulating fluid volume as a result of diseases, including congestive heart failure and hypertension. The guideline of 20mg/l for sodium expressors a level in water that physicians and sodium sensitive individuals should be aware of increase where sodium expressors. veral diseases, including congestive heart failure and be being carefully controlled. For additional information

	Date(s)	Detect						
Radionuclides	Collected	Value	Range Detected	MMCL	Possible Source of Contamination			
Gross Alpha (pCi/l)	4/3/2012	1.41	-0.61 - 1.41	15	Erosion of r	natural deposits		
Radium 226 (pCi/l)	4/3/2012	0.39	-0.25 - 0.39	5	Erosion of r	natural deposits		
Radium 228 (pCi/l)	4/3/2012	0.75	0.11 - 0.75	5	Erosion of r	natural deposits		
UCMR3 EPA unregulated contaminants	Date(s) Collected	Highest Detect Value	Range Detected	Average Detected	ORSG	Possible Source of Contamination		
1,4-Dioxane (ppb)	2/7/2017	0.21	ND - 0.21	0.060	0.3 ppb	Solvent or stabilizer used in processing of paper, cosmetics, shampoos, coolant		
Perfluoro octanesulfonic acid -PFOS (ppb)	12/20/2017	0.025	ND - 0.25	0.006	70 ppt	Surfactant in fire fighting foam; alkaline cleaners, floor polish, pesticide, plane deicing		
Perfluorooctanoic acid - PFOA (ppb)	12/20/2017	0.0087	ND - 0.0087	0.0015	70 ppt	Surfactant in fire fighting foam; alkaline cleaners, floor polish, pesticide, plane deicing		
Chromium (ug/L)	2014	0.26	ND - 0.26	0.237	100 ppb	Prevalent natural element		
Strontium (ug/L)	2014	99	ND - 99	46.375	1500 ppb	Naturally occuring element		
Vanadium (ug/L)	2014	0.21	ND - 0.21	0.210	21 ppb	Naturally occuring element		
Chromium VI (ug/L)	2014	0.29	ND - 0.29	0.130	NA	Industries that process or use chromium or chromium compounds.		

Chromium VI (ug/L) 2014 0.29 ND - 0.29 0.130 NA Industries that process or use chromium or chromium compounds.

Third Unregulated Contaminant Monitoring Rule (UCMR3)

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER - Availability of Monitoring Data for Unregulated Contaminants for Hyannis Water System

As required by US Environmental Protection Agency (EPA), our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a public health protection standard. As our customers, you have a right to know that these data are available. If you are interested in examining the results, please contact Hans Keijser at (508) 775-0063 x 3502 or 47 Old Yarmouth Road Hyannis, MA 02601. is notice is being sent to you by the Hyannis Water System. State Water System ID#: 4020004

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER Reporting, Monitoring, Notification Requirements Not Met for Hyannis Water System

Our water system failed to meet Ground Water Rule (GWR) reporting and notification requirements over the past year. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct these situations

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During July 2017 we failed to notify our wholesale supplier Centerville, Osterville, Marston's Mills Water Department (COMM) of a total coliform positive sample collected from our interconnect with them.

What should I do? There is nothing you need to do at this time.

Water purchased from COMM is treated like all source water by the Hyannis water treatment facilities. All monitoring within the Hyannis distribution system during July were negative for total coliform.

What happened? What is being done?

Hyannis Water System (HWS) purchases water from COMM through an interconnection between the two systems. On July 11, 2017, a routine sample taken by HWS at the interconnection was total coliform positive. Coliform are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria might be present. As per the GWR the HWS was required to notify COMM within 24 hours of confirmation of a positive sample from the connection with their system. This notification would trigger additional source water sampling by COMM. HWS did not make the 24 hour notification. Once notified, COMM conducted source water sampling and confirmed all sources were total coliform negative.

As a result, of this failure to notify HWS has developed and trained its employees on a Standard Operating Procedure for the notification of wholesale providers within 24 hours of a total coliform positive sample as required by the GWR. For more information, please contact Hans Keijser at (508) 778-9617.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Date distributed: 6/1/2018 This notice is being sent to you by Hyannis Water System. PWS ID#: 4020004

Water Source Characteristics

The sources of drinking water (for both tap and bottled water) include rivers, lakes, streams, ponds, springs, reservoirs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, and, in some cases, radioactive materials, and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include

- Microbial contaminants, such as viruses and bacteria, which may come from sewer treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production. These contaminants can also come from gasoline storage, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil or gas production and mining activities.

For Your Information

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where to go for more information: The Massachusetts DEP at (617) 292-5885 or www.state.ma.us/dep or the Massachusetts Drinking Water Education Partnership at www.madwep.org.

SAFE DRINKING WATER ACT - WATER QUALITY STANDARD DEFINITIONS

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Massachusetts Maximum Contaminant Levels (MMCL): The Massachusetts maximum contaminants listed in the drinking water regulations consist of promulgated US EPA MCLs which have become effective, plus a few MCLs set specifically by Massachusetts.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Minimum Detection Limit (MDL): Is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte is greater than zero.

Secondary Maximum Contaminant Level (SMCL): These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of disinfectant is necessary for control of microbial contaminants

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectant to control microbial contamination.

Primary Standards: Federal drinking water regulations for substances that are health-related. Water suppliers must meet all primary drinking water standards.

Secondary Standards: Federal drinking water measurements for substances that do not have an impact on health. These reflect aesthetic qualities such as taste, odor and appearance. Secondary standards are recommendations, not mandates.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Massachusetts Office of Research and Standard Guideline (ORSG): This is the concentration of a chemical in drinking water, at or, below which, adverse, non-cancer health effects are unlikely to occur after chronic (lifetime): exposure. If exceeded, it serves as an indicator or the potential for further action

Third Unregulated Contaminant Monitoring Rule (UCMR3): As required by US Environmental Protection Agency (EPA), our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a public health protection standard.

KEY

CU: Color unit

NA: Not applicable

ND: Not detected

Ug/L: Micrograms per liter=ppb

ppb: Parts per billion. The equivalent of one second in 32

ppm: Parts per million. The equivalent of one second in 12 days.

pCi/L: Picocuries per liter. The Equivalent of one second

in 32 million years

NTU: Nephelometric Turbidity Unit TON: Threshold Odor Number

TI: Treatment Technique